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ABSTRACT

This edited volume presents case studies from Europe, North America, Asia, and the Middle East in which teachers have adapted and pioneered teaching innovations. The book is divided into 4 parts, 12 chapters, and an introduction. Part one, "Building a Computer Learning Center," has two chapters: "Guerilla Tactics: Creating a Mixed-Media ESL Lab from the Grass-Roots Up" (Mark Litwicki); and "Designing a CALL Facility from Bottom to Top at the Military Language Institute in Abu Dhabi" (Vance Stevens). Part two, "Organizing the Curriculum," has four chapters: "A Self-Access Center for Business English Learners: Meeting Individual Learning Needs" (Julio C. Gimenez); "Web Integration: A Model for Task-Based Learning" (Katherine Isbell and Jonathan Reinhardt); "The LEO Lab: Student and Teacher Training" (Karima Benremouga); and "Getting 'real' with Video and CD-ROM: Real English at the Marzio School" (Michael Marzio). Part three, "Engaging Students," has four chapters: "Investing in People: Not Just Flashy Gadgets" (June Averill, Eve Chambers, Maria Dantas-Whitney); "Immersed in Writing: Networked Composition and Kendall Demonstration Elementary School" (Joy Kreeft Peyton); "Enthusiasm, Experience and Collaboration: Technology in the DEIL/IEI" (Douglas G. Mills); and " "Teaching Writing with Web Projects: Famous Personages in Japan" (Thomas N. Robb). Part four, "Training Teachers," has two chapters: "Hands-On Teacher Training: Presentation Software" (Elizabeth Hanson-Smith); and "A Teacher Preparation Course for Computer-Assisted Language Learning" (Sarah Rilling). A "Glossary of Key Terms" and a subject index are also included. (Contains 173 references.) (KFT)

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Technology-Enhanced Learning Environments

Edited by Elizabeth Hanson-Smith

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Case Studies in TESOL Practice Series
Jill Burton, Series Editor

Technology-Enhanced Learning Environments

Edited by Elizabeth Hanson-Smith

Case Studies in TESOL Practice Series

Jill Burton, Series Editor

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Series Editor's Preface

The Case Studies in TESOL Practice series offers innovative and effective examples of practice from the point of view of the practitioner. The series brings together from around the world communities of practitioners who have reflected and written on particular aspects of their teaching. Each volume in the series will cover one specialized teaching focus.

CASE STUDIES

Why a TESOL series focusing on case studies of teaching practice?

Much has been written about case studies and where they fit in a mainstream research tradition (e.g., Nunan, 1992; Stake, 1995; Yin, 1994). Perhaps more importantly, case studies also constitute a public recognition of the value of teachers' reflection on their practice and constitute a new form of teacher research—or teacher valuing. Case studies support teachers in valuing the uniqueness of their classes, learning from them, and showing how their experience and knowledge can be made accessible to other practitioners in simple, but disciplined ways. They are particularly suited to practitioners who want to understand and solve teaching problems in their own contexts.

These case studies are written by practitioners who are able to portray real experience by providing detailed descriptions of teaching practice. These qualities invest the cases with teacher credibility, and make them convincing and professionally interesting. The cases also represent multiple views and offer immediate solutions, thus providing perspective on the issues and examples of useful approaches. Informative by nature, they can provide an initial database for further, sustained research. Accessible to wider audiences than many traditional research reports, however, case studies have democratic appeal.

HOW THIS SERIES CAN BE USED

The case studies lend themselves to pre- and in-service teacher education. Because the context of each case is described in detail, it is easy for readers to compare the cases with and evaluate them against their own circumstances. To respond to the wide range of settings in which TESOL functions, cases have been selected from diverse EFL and ESL settings around the world.

The 12 or so case studies in each volume are easy to follow. Teacher writers describe their teaching context and analyze its distinctive features: the particular demands of their context, the issues they have encountered, how they have effectively addressed the issues, what they have learned. Each case study also offers readers practical suggestions—developed from teaching experience—to adapt and apply to their own teaching.

Already published or in preparation are volumes on

- action research
- assessment practices
- bilingual education
- community partnerships
- content-based language instruction
- distance learning
- English for specific purposes
- intensive English teaching
- interaction and language learning
- journal writing
- mainstreaming
- teacher education
- teaching academic writing
- teaching English as a foreign language in primary schools

THIS VOLUME

The enduring role of teachers in the design and use of technology in language education is a central theme of this volume, which covers case studies from Europe, North and South America, Asia, and the Middle East. Teachers in these case studies have adapted and pioneered teaching innovations that range from simple additions to traditional classroom teaching to radical alternatives that change the nature of language learning and teaching.

Jill Burton
University of South Australia, Adelaide

INTRODUCTION

The Role of Technological Environments in Language Education

Elizabeth Hanson-Smith

The case studies in this volume cover a wide range of technologies: modest labs with self-access software, state-of-the-art facilities with electronic whiteboards, local area networks, wide bandwidth Internet connections, Web-based projects, content CD-ROMs with video clips, tutorial applications, and so on. The title calls up a motif elaborated in *CALL Environments* (Egbert & Hanson-Smith, 1999): Although computers and other electronic technology have often been looked upon as either tools or tutors, they, in fact, present an *environment* in which learning takes place. This is not to say that a computer is simply a classroom in a box. The word *classroom* implies a restricted area, bounded by four walls. In the technology-enhanced environment, the classroom has expanded to encompass the world. The chapters in this volume thus reflect the wide range of uses to which technology may be put as well as the international nature of electronic media. Learning centers, classrooms, and labs become spaces in which students and their teachers explore, create, and communicate as they learn language.

With such a variety of spaces and uses confronting the reader in this volume, it may be necessary to point out the common themes that inform these chapters. One such theme is the dominance of Internet use in education. Most of the programs described in this volume use either local area networking or the World Wide Web, or both, to connect students to their classmates, their teachers, and the world at large. Although another volume in this series looks at examples of distance learning, most of the authors here use the Web as a natural extension of classroom activities: to post class syllabi and assignments, correspond with students via electronic mail, create on-line discussion, and publish class projects as part of a task- and content-based pedagogy. That is, the programs described here do not use the Web solely for student-to-student or student-to-teacher discourse (although most do that as well) but rather as an environment for education, an optimal setting for learning to take place.

A second common theme of these studies is the significant role of teachers: Technology in education begins and ends with teachers. Many (particularly administrators) believe computers can replace teachers. In fact, a number of the authors in this volume started from that premise. However, all came to believe instead that computers are a vehicle to learning, a vehicle that is driven by teacher ingenuity and inspiration. Technology can enrich the often-impoverished classroom world—four walls, desks, chalkboard, pencil and paper—with explorations of the greater world and the many accents of the real English speakers in it. Students, by and large, eagerly embrace the universe technology opens to them, but in most situations, teachers are the gatekeepers of this rich storehouse of learning. Their hard work, planning, and organizing are the pathway for students to enter this enriched new environment. Where teachers are not interested in computers, students tend not to go to the lab. Where teachers learn to use the technology and collaborate in its pedagogical development, students flourish in surprising ways.

If a common theme of this volume, then, is the significance of teachers, another is the role of technology in transforming institutions at the grassroots level. In another context (Hanson-Smith, 1999), I have called technology "the quiet revolution." Almost every one of these studies indicates that changes wrought by technology far exceeded the designers' original intentions, often leading to new ways of teaching and learning, enhanced cooperation among teachers, the creation of more satisfying working conditions for instructors, and more independence and self-sufficiency for students who are moved to take responsibility for and control of their own learning.

Self-access labs that allow students to learn at their own pace, contract study where students and teachers identify learner needs together, and project-based learning where content is researched and explored independently—these are a few of the pedagogical situations described herein where technology has been the determining factor. As the variety and complexity of materials on the Web and CD-ROM increases, teachers become guides and mentors. At the same time, they reshape the curriculum, class schedules, and their workplace to take best advantage of the learning opportunities that technology presents. Learning another language often seems a daunting task, but technology is such an enormously motivating environment, even in its present state, where it is only halfway to becoming a seamless appliance, that students are truly inspired to perform. In turn, teachers find ways to shape schooling to the needs of a new, more autonomous learner.

This volume of case studies attempts to include areas of the most general concern to those engaged in technology-enhanced teaching and learning, whether they are beginning the process of building a lab or seeking to branch out into producing their own CD-ROMs. Chapters include consideration of lab design, curricular implications, individual courses, student projects, and teacher education. Part 1, Building a Learning Center, describes two vastly different approaches to obtaining and designing computer facilities: one with no visible resources on a Native American reservation in the southwestern United States, the other with generous funding at a military facility in the Middle East. Part 2, Organizing the Curriculum, details various ways in which the technology-enhanced learning environment has shaped what is studied and how. These chapters include an English for special purposes self-access lab in Argentina, a Web-integrated course at an English-medium university in Japan, a software-oriented lab in the U.S. Midwest, and a teacher-produced series of CD-ROMs and videos that use authentic speech acts for language learning in France. Part 3, Engaging Students, speaks to the intensely motivating experience technology can provide for a wide range of students, from deaf children at an elementary school in Washington, DC, to adult EFL or ESL learners in a university-associated intensive program in Oregon. Whether describing an entirely Web-based program, as at the University of Illinois, or a single project-based course, as at Kyoto Sangyo University, the authors report striking enthusiasm and increased autonomy and individualization in learning. Part 4, Training Teachers, outlines a hands-on approach to presentation software, and a course for the instructor just getting started in educational technology. Both chapters confirm the motivating force of computer-assisted language learning (CALL) for the educators who will be guiding the next generation of students. Whether the school's preference is for traditional grammar drills or exciting simulations, the smorgasbord of materials provided by technology can suit an extended variety of tastes: No one goes away hungry.

An overriding consideration in selecting contributions for this volume has been their practical adaptability to the situations most teachers will encounter in their professional careers. My concern was not so much with the very latest in technological innovations—for these are quickly displaced by still newer inventions—but with the kinds of pedagogical adaptations that exemplify solid approaches to teaching in a computer-enhanced environment. As Meskill (1999) has warned, "technologies used in education very rarely originate there" (p. 460). This "hand-me-down" syndrome, as she calls it, implies that teachers must think long and hard about how computers, CD-ROMs, digital video discs (DVDs), wireless Internet, digital camcorders, and all the other expensive toys can best be put to the purposes of teaching and learning another language. It is hoped that this volume of case studies will provide good models that may be applied not just to today's technology, but across the range of innovations as they are handed down to teachers.

As the new technology continues to evolve, it will no doubt become easier to use, faster, more powerful, more like the telephone or television in accessibility. But as the authors of this volume aver, it is the people, not the flashy gadgets, that make a difference in learning.

CONTRIBUTOR

Elizabeth Hanson-Smith is a software designer and educational technology consultant. She serves on the TESOL Board of Directors, authored *How to Set up a Computer Lab* (Athelstan) and, with Joy Egbert, edited *CALL Environments* (TESOL). Her software credits include Constructing the Paragraph (Computers for Education), Oxford Picture Dictionary Interactive (lead designer; Oxford University Press), and Live Action English Interactive (design team/quality assurance; written by Larry Statan, Command Performances).

PART 1

Building a Computer Learning Center

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CHAPTER 1

Guerrilla Tactics: Creating a Mixed-Media ESL Lab From the Grass Roots Up

Mark Litwicki

INTRODUCTION

Turning vision into reality is hard work. (Heermann, 1988, p. 148)

Near the end of my first semester as head of the ESL department at Cochise, a rural community college in southeastern Arizona, my colleagues and I fell into a conversation about the merits of having a language lab. Not surprisingly, we came to the conclusion that a lab of some sort would be of great benefit to our students, offering flexible practice and independent learning opportunities beyond the classroom for our most motivated students. Our discussion turned to specifics: multimedia computers, tutorial software, Internet links, and individual video and audio stations. We had two things to build on: a small, aging Macintosh-based lab that was sadly underutilized, and our own ignorance of how vast and difficult a task we faced.

I now learn, 2 years later and after reviewing the literature, that when one begins planning the creation of a language lab, the first thing one should do is consider carefully a lengthy list of variables and then map out every purchase meticulously (Heermann, 1988; Huss-Lederman, 1995; McVicker, 1997). In retrospect I see that if we had followed this advice, we would have realized quickly that our goals were unattainable, that with recent funding cuts, no substantial federal grants, slipping enrollments college-wide, intense competition for internal resources, and little institutional support, our chances of success were negligible. If we had done a little research, we would have abandoned the idea early on and saved ourselves a lot of time and trouble. And our students would not have a mixed-media language lab today.

Fortunately, then, we did not consult the literature. For one thing, most of what the literature offers is recommendations on the best ways to spend large amounts of money, and for various reasons we did not have any of that commodity to speak of. Large budget requests were out of the question. We made inquiries regarding grants but had neither grant-writing experience nor institutional support for such endeavors, and, frankly, we were too impatient to follow that route. Our students needed a lab now, not in 2 or 3 years, and they needed it whether or not we could manage to get a substantial grant. As for corporate partnerships (that panacea of stingy legislators), the primary industry of our county had ceased operations a decade earlier. Clearly, if this lab were to happen, it would happen outside the boundaries of any normal organizational procedures. Extraordinary measures would be necessary.

This chapter will describe the facility we envisioned and trace the path we took to get it—a path more reminiscent of the Ho Chi Minh Trail than the information superhighway. Bringing the project together required not only commonplace development strategies (defining goals, building consensus, seeking support) but also guerrilla tactics such as mapping a covert plan of phased implementation, expropriating certain existing assets, establishing tactical alliances, and financing the project by way of wily sneak attacks on unspent budget remnants. Though at the time we never really saw ourselves as subversives, we also initiated—in true guerrilla fashion—a protracted campaign of reeducation, turning our skills as educators to the task of enlightening our own colleagues. Creating the Mixed-Media Instructional and Student Support Lab (MISSL), the centerpiece of a campus-wide educational technology expansion, was possible only as part of a long-term effort to raise awareness of the importance of a small, marginalized ESL program to the mission of the college.

In addition to retracing the steps we took toward implementing our lab, this chapter also offers a series of suggestions and recommendations intended to supplement the standard literature on how to plan, finance, and execute this kind of learning facility under less-than-optimal conditions. (Note that throughout this chapter the pronoun *we* refers to my colleagues in the ESL department, acknowledged at the end, and myself.)

◈ CONTEXT

Cochise College is a community college with main campuses in Douglas and Sierra Vista, Arizona. Its mission is to serve the higher educational needs of rural Cochise County, in the southeastern corner of Arizona. Less officially, the Douglas Campus—where the ESL department is located—also serves the northeastern corner of the Mexican state of Sonora, just across the border. For the last several years, the college has had full-time enrollment equivalents of approximately 5,000 students per semester, though in the 4 years prior to 1997 that number had seen a gradual decline. The reasons for this decline were perhaps obvious: Since the closing of its principal industries—mining and smelting copper—in the mid-1980s, this region has suffered a marked and ongoing economic downturn, and consistently reports among the highest rates of unemployment in the state.

Thus, the institutional context of our programs at the time we began formulating our plans for this facility can be characterized in terms of recent revenue reductions, slipping enrollments in nearly all disciplines (including ESL), intense competition for internal resources, and little institutional enthusiasm for new and innovative projects, especially new and innovative projects that required substantial financial investment. I offer these candid and somewhat unflattering background details not as a digression but because they had clear effects on the situation in which the mixed-media facility was being developed: threats of major funding cuts from the state, decreasing income at the local level, and a general sense of malaise within the institution. None of these factors inspired great optimism toward the idea of initiating a major new project. (I should mention that after several years of focused effort to enhance the quality and relevance of our services college-wide, our enrollments, revenues, and morale have made a solid rebound—factors that perhaps make it easier at this point to recount our anxieties of the recent past.)

Cultural and Linguistic Factors

As we are located within 10 miles of the Mexican border, the cultural makeup of the Douglas Campus student body is predominantly Hispanic, with international students from Mexico and Latin America as well as Japan, Korea, Africa, and other parts of the world. The loss of the primary local industry in the 1980s resulted in an exodus of many of the residents of Douglas in search of employment elsewhere. This exodus changed the makeup of the community because as the prior residents left during the late 1980s and early 1990s, the area became a popular destination for new immigrants from Mexico. With more than 75% of students reporting Mexican or Mexican-American heritage, Spanish is now the dominant language on the campus and in the community (on both sides of the border). This situation creates a learning environment more typical of an overseas EFL program than an ESL program inside the United States: Students have limited exposure to the target language outside the classroom, and little need to use it for survival in their daily lives. Here in the ESL department we observed these changing demographics and saw their implications: We clearly needed to provide more target language input for our students. How we chose to address that need is the subject of this chapter.

DESCRIPTION

The ESL Programs

Our core enterprise is a daytime ESL program that focuses on English for academic purposes. This program operates on a semester basis and spans four levels, from basic to high intermediate (*advanced* in local parlance). Each level entails completing four courses of approximately equal scope, each addressing one of four areas: oral communication, reading, writing, and grammar. Full-time students study in all four of these skill areas in a semester, whereas part-timers take up to two courses per semester. A 6-week summer English immersion program is coordinated with the daytime program.

By means of student surveys, we have identified three primary "typical learner" profiles in the daytime program:

1. U.S. residents or international students who plan to complete ESL studies and go on to pursue further studies in the United States, whether technical (e.g., Cochise offers aviation-related certificate programs) or academic (Associate's Degree or university transfer)
2. students or graduates of a university outside the United States (mostly Mexico) who have taken a semester or two to focus on English study and plan to return to the country of origin for further study or work
3. nontraditional students, including people who work at night and non-working parents of school-aged children

Also offered through the ESL department is an evening program in English for international business. This program is aimed primarily at working people from the local community in Arizona and from the *maquiladoras* (manufacturing assembly plants) just across the border in Sonora. To round out our offerings, we have on various occasions created specialized English for special purposes programs, such as English for the border workplace and English for aviation technology.

Learning facilities for the intensive English programs have always been adequate: ESL classes are held in regular classrooms around campus, interspersed with other classes. In accordance with a stated departmental principle of integration, we have rejected past proposals to concentrate all ESL activities in one area of the campus. We do not believe it is pedagogically appropriate to ghettoize language learners. Language limitations already constitute enough of a barrier between our students and their non-ESL peers—we try not to add geographical barriers as well. Audio and video equipment are available in all classrooms; however, the only language lab on campus—a standard-issue audiolingual configuration with 12-pound headphones and claustrophobic cubicles—was mercifully decommissioned in the early 1980s. No one mourned its passing, except in that we were left with no language lab at all. This situation changed slightly in 1992, when the college constructed a small lab with eight multimedia-capable Macintosh computers. This humble facility, housed in a temporary construction roughly the size of a large broom closet, was the germ of what would grow into the mixed-media learning lab.

The Mixed-Media Learning Lab: Versions 1 and 2

Before we could visualize what we wanted in a learning lab, we had to consider the needs of our students (or at least, what we perceived their needs to be, based on experience, observation, and surveys). Because of the primarily non-English-speaking context of our programs, we identified as a first priority providing our students with more English language exposure and practice opportunities. However, simply expanding the total number of class hours was neither feasible nor advisable: Full-time students were already in class 20 hours per week, and students who studied part-time did so due to either financial or schedule limitations that we could not remedy. Nonetheless, we believed that there was a significant group of highly motivated students who, if given more extended self-study/independent learning opportunities, would take advantage of and benefit greatly from them. We also believed that offering such opportunities to such students would have a positive effect on the academic atmosphere of the ESL programs as a whole.

Agreeing with the assertion that "one of the most obvious and accessible benefits of CALL [computer-assisted language learning] is its capacity to provide personalized and self-paced learning" (Ahmad, et al., 1985, p. 116), and given the limitations noted above, we decided that a flexible, open-attendance, self-access, no-additional-cost, technology-based learning-and-tutoring facility was the best way to offer extended learning opportunities to motivated students. Further, we felt that in addition to the previously mentioned benefits, this kind of facility would allow us to accommodate a variety of learning styles for all students (even, perhaps, the less-motivated ones), a notion supported by Bickel and Truscello (1996), who assert that computer-based learning enables troubled learners to experiment with "new strategies that might make difficult material seem . . . easier" (p. 16).

We also agreed that this facility should be used only to supplement classroom instruction, in much the same way that students can receive support from tutors, rather than to take the place of any class time. The lab would not be an instructional facility per se; that is, an instructor could not bring an entire class into the lab for a lesson. One reason for this condition was that the original Macintosh computer lab was far too small for most classes, but the main consideration was the purpose of the lab, which was predicated on students' needs for extended independent learning opportunities, not on instructors' lack of effective classroom activities.

The facility we retrofitted to meet these needs originally consisted of eight Macintosh computers in a small, poorly ventilated room in a low-traffic part of campus. The Macintosh computer lab had been set up mainly for journalism and media communications students, and because these were limited in number, the lab sat empty much of the time for nearly 3 years. When the ESL and language departments finally recognized the situation as an opportunity, we wrangled a time-sharing scheme by which our students could use the multimedia computers for language study during hours when the lab was not being used for other things. Next, we ordered three VCR/TV units and several audiotape players to extend the range of self-study options. To complement these technology-based tutors, we also arranged with the campus tutoring center to provide human tutors in the lab according to a set schedule. Copies of audio- and videotapes used in the ESL curriculum were placed in the lab so that students could prepare and review for their classes. Additional textbooks and their audiovisual ancillaries were also made available. We arranged with the college library to make several feature movies and general-interest documentaries on videotape available in the lab (some of these came accompanied by printed study materials). We purchased various kinds of software, including audiotape-based pronunciation packages and multimedia grammar, vocabulary, and writing programs.

Version 1 of the lab became an integral part of the ESL curriculum. Early in the semester, orientations were held for both students and instructors. Some instructors made lab work a requirement and checked sign-in sheets to assure compliance; others simply left it up to the student. Instructors could prescribe specific materials and activities according to individual students' needs or goals. A rather surprising discovery we soon made was that students seemed singularly unimpressed with high-tech multimedia materials for their own sake; after a brief initial period of curiosity, students tended to select self-study materials based entirely on what they found useful and not based on the mode of delivery or other superficial factors like colors, music, and dancing bears (which multimedia developers seem to believe are the keys to learning). We had the unexpected situation of students passing up flashy multimedia materials in order to listen to pronunciation tapes.

After using this facility for two semesters and struggling with its deficiencies of space, time, and location, we submitted a formal proposal for major expansion into a new site. Our success with the smaller lab helped convince administrators that the project was feasible, and we were finally able to secure funding for a new lab. Version 2 included 15 new multimedia computers, a larger room in the center of campus, more audio and video workstations, and Internet connections.

The recent implementation of that learning center, the Mixed-Media Instructional and Student Support Lab (MISSL) was the final step in the process as an endeavor undertaken wholly within the ESL department; the facility is now open for technology-based tutoring for any student at the college (though due to the lab's history, language students still dominate), and responsibility for its direction and management has moved to the Student Development Center's tutoring office. This latest transformation was part of the original covert plan of action, which was essentially to create the lab, get it working, expand it, and then, once we were sure our students could get what they needed from it, get someone else to take charge of it. The decision to move the lab out of the ESL department's sphere of control may seem a betrayal of all we worked so hard to obtain, but that decision was made consciously, based on our conviction that the integration of ESL students into the college community is the ultimate goal of our programs. From the beginning, a primary purpose of the MISSL was to provide a facility where ESL students could learn alongside their non-ESL peers, and maybe even make an acquaintance that would prove educationally valuable as well.

DISTINGUISHING FEATURES

What distinguishes our facility from others like it is not, I think, its design or how we use it, but rather the principles and strategies used to create it despite the very real obstacles that have been discussed above. Of course, we utilized standard project development strategies like defining our purposes and goals, building consensus, planning budgets, and seeking support from superiors and revenue managers (see Huss-Lederman, 1995; Kotlas, 1998; McVicker, 1997). But a by-the-book approach alone would not have sufficed in our complex and difficult situation; we found it essential to go beyond the commonplace and resort to strategic devices borrowed from the likes of Ho Chi Minh and Che Guevara: phased implementation of a covert plan, tactical alliances with unlikely associates, expropriation of needed resources (and other forms of creative financing), and ongoing reeducation of unenlightened comrades. These are the aspects of the project that I refer to as *guerrilla tactics.*

The nature of guerrilla war is that a smaller, less well-equipped force can triumph over a larger, better prepared adversary. Though one does not generally think of developing a project within an organization in terms of war, I believe there are often striking similarities. Warring armies seek control over an element each desires and both cannot have (e.g., land, gold, Helen of Troy). So it is with budgets and facilities in an organization: Any resources one party can gain control over are resources that others must therefore live without. The very common institutional turf wars waged to control institutional assets and revenues can be fierce and protracted. And victory in many cases depends not on brute strength but on cunning, agility, and persistence—the forte of the jungle soldier. In the following paragraphs I will describe several of the guerrilla tactics we brought to bear in our battle to create the mixed-media ESL lab.

Covert Planning and Phased Implementation

Discretion is a condition for any successful guerrilla initiative. As described in the previous section, the first phase of the MISSL enterprise, the tiny Macintosh computer lab, Version 1, was outfitted in a small room in a forgotten corner of the campus. We did it quietly, with a minimum of fanfare; most of our colleagues did not know of its existence until long after it had been deployed. We did this intentionally: Before they could level their irrefutable arguments as to why the project would never work, it was already working. Before they could voice their objections to our commandeering precious resources for such an outlandish facility, we had spent the resources. I firmly believe that if we had taken a more customary approach and submitted a full plan and proposal at the outset, this project would have died a lingering death in a series of budget committees, advisory committees, technology committees, and so on, and our students would still be without a lab. At the least, the process would have been delayed by a year or more. By keeping the operation under wraps, we avoided drawing the attention of those who might find our success a threat to their own. By creating a small facility with the undisclosed plan of later using it to launch an incursion into unvanquished territory, we borrowed a tactic from those early pioneers in the art of guerrilla war: the Greeks. The first lab was our Trojan horse; little did our rivals suspect that hidden inside was an invading force of ESL insurgents, chalk and dictionaries at the ready.

Another reason to use a plan of phased implementation is to take advantage of the underdog effect: Everyone likes to see an underdog win. We used this psychological ploy to our advantage, frequently pointing out that our dream of having a humble little lab was accomplished entirely by the sweat of our brows and our undying dedication to our students. When we came to request major funding for expansion, this underdog perception almost certainly gained us sympathy among all but the most jaded budgeters.

Tactical Alliances

As the saying goes, politics makes strange bedfellows, and the politics of an educational organization are no exception. One of the keys to triumphing in a contest with a more powerful opponent (i.e., larger, more prestigious, or better-connected programs and departments) is the principle of guerrilla warfare that involves the establishment of strategically useful alliances with little regard to any philosophy or doctrine save pragmatism. In our case, we gained a broad foundation of support by bringing other disciplines into the project. For example, the Spanish department was included from the beginning (our ESL and foreign language departments share a building and, of course, closely related fields of instruction). Less predictably, we contacted colleagues from the music program and learned that they had great interest in providing a facility in which music students could study CD-ROM- and video-based materials on music theory and history. We also spoke with an anatomy instructor who had CD-ROM-based software, but nowhere for her students to use it. By the time we began to move our project forward from the abstract to the concrete, we had built a coalition of groups which, though seemingly unrelated, were united by two particulars: a desire to offer students technology-based learning opportunities, and very little hope of doing so independently. Although we created this coalition out of necessity, it soon became obvious to us that there was no good reason in a school the size of ours to limit a mixed-media tutoring facility to a single discipline. With large enough hard-disk storage capacity, we could install dozens of programs on a single computer, and the video- and audiotapes required only sufficient shelf space. (Again, opening the lab to students of all disciplines also supported our tenet of integration of ESL with non-ESL students.)

The next group to bring into our coalition was the administration. Not the whole administration, only the one or two people who could help us execute our plans to expropriate assets and conduct a behind-the-scenes budget coup (as described in the next two subsections). Identifying these individuals was easy enough: They were the ones who always called to tell us we had gone over budget on this or that expenditure. More difficult was convincing them that the project we had in mind was feasible and that they, by dint of having a hand in it, would look good when the whole thing came together successfully. Appealing to the ambition of a lower- or middle-echelon administrator is a nearly foolproof strategy, and in fact we were able to enlist the aid of the necessary individuals; they even seemed to appreciate that a highly irregular secret plan of phased implementation would be the most certain path to accomplishing our long-term objective, the full MISSL.

The only academic areas we avoided steadfastly were the computer and business education departments. Early contacts with those groups made it clear that they could easily beat us at our own game: True pragmatists, their idea of a language lab was to use our students' needs as a ploy to secure yet another roomful of fast computers on which they would agree to put a couple of language programs in case a language student should wander in, but meanwhile said computers could be used for more serious applications like spreadsheets, databases, and word processing (applications which, though useful in themselves, did not fit in with our vision of using the lab for independent learning and technology-based tutoring). Using another fundamental guerrilla skill, we instituted a quick tactical retreat. It took months of lying low to convince our enthusiastic colleagues in the business education department that we had in fact completely and permanently abandoned our plan to create a mixed-media learning facility.

Expropriation

Tactical retreat on one front did not mean a cessation of all subversive activity. With the collaboration of our network of allies across campus, we began the work of identifying supplies that might aid us in our war efforts. This process entailed discovering a functional item (a chair, say) that was not currently used (if your campus is typical, such items abound), and then obtaining permission for its use from whoever had authority over that item, or more accurately, whoever believed he had authority over the item. The search took us into every corner of the college, including—profitably—the warehouse. We found in many cases that certain items had been so long forsaken that no one could remember who had procured them or for what purpose; in such cases we simply absconded with our new treasure, being sure in all cases dutifully to report the transfer to the college's property office. As described above, we already enjoyed partial control of a small, underused Macintosh-based lab in a glorified broom closet. Into that space we began to move other "found" assets: tables from the warehouse, bookcases that had languished empty in the back of a chemistry classroom, throw-away computers (not the latest, but we had software that did not know the difference), chairs, a VCR, and so on. By the end of this discreet but frankly shameless property grab, we had assembled a major part of what we would need to turn our vision into reality. To finish the process, we loaded our dollies with software and learning materials from our own department.

A final act of expropriation involved not physical supplies but a personnel item. In an unrelated strand of our ongoing program improvement efforts, we had phased out the use of ESL paraprofessionals. The phased-out positions had been part-time and rather lightly remunerated, but there was also a three-quarter-time lead paraprofessional position. Eliminating the paraprofessionals meant eliminating the need for this position as well. Appealing to our administrative allies, we managed to get the funding for this position reallocated to a lab coordinator position; this was a clever change because creating a new position of any kind generally raises many questions at all levels and could have derailed our project just as it was gaining steam.

Guerrilla Financing

Even after a thorough scavenger hunt of all the existing assets we were able to beg, borrow, or steal from around campus, we discovered that we lacked many key components to make our lab a reality. It was unavoidable: These items—workstation tables, software, and electrical upgrades—had to be paid for in dollars. Where, then, would we get the money? Although several writers offer essential advice on how to plan the budgeting process for a lab (Heermann, 1988; Huss-Lederman, 1995; McVicker, 1997), all assume that the capital needed to create the lab already exists. Typically, a case study will start by recounting how the program in question had recently received a grant (usually a large one) for implementing technology; the task the implementers faced was primarily one of determining how the money could be spent most effectively and responsibly—a formidable task in itself, and one well-explored by many authors. But our situation was different from those we read about: To put it succinctly, we had no money. At least, not the kind of six-figure sums that the literature seemingly took as a starting point. And, as an unglamorous program in a small college in an economically depressed rural county, we had little prospect of getting that kind of money in the foreseeable future. We explored the usual, legitimate fund-raising options—seek grants, submit detailed budget proposals for the following fiscal year, establish partnerships with local industry—but for the reasons already discussed, none of these options was viable. We saw clearly that the furtive approach would be quicker and more certain. We would resort to the underhanded tactic, the sneak attack. In meetings with those budget controllers who had earlier been convinced that the success of this lab would help their own long-term prospects, we clarified what we needed and what it would cost, and we looked at where we might scrape the money together. The funds sought were, to be sure, modest—in the low thousands—but we still had no good idea where we might come up with such money.

Upon close scrutiny, we discovered what every experienced administrator knows instinctively: There was money hiding somewhere. In fact, relatively small dollar amounts were available in a number of budgets in various areas, and as we were nearing the end of the fiscal year, the budget controllers could begin to predict how much might be left over. (Another thing every experienced administrator feels in his very bones: It is a crime against nature not to spend every penny budgeted.) Thus, we began a process of earmarking money from various accounts to be spent on specific components of this project. This was done, of course, strictly according to all laws, rules, and policies regarding fund types and budget allocations. Of great help at this point were the alliances we had forged earlier with other academic areas that hoped to benefit from the lab. For example, we might purchase audiotape players from music budgets, with the input and blessing of the music instructor. Spanish might pitch in to purchase a video player, a workstation table, and some software. Math might concede funds for some CD-ROM drives and more software. And so on. The ESL department was by far the largest contributor to the effort, with the most generous single donation being that for the lab coordinator position.

In short, the guerrilla financing process amounted to an orchestrated plan whereby monies from various academic units and departments were spent to purchase pieces of a puzzle. Individually none of the purchases would raise the slightest suspicion, but they would come together to complete the picture we had in our imagination: the initial phase of the mixed-media lab. I should note here that in order to put forward the next phase of the plan, we were requested to—and did—assemble a comprehensive plan and proposal for the future of the project. The underdog effect helped: Having shown the depth of our resourcefulness and dedication to our students by constructing a lab on our own time with existing assets, it was easier to convince our superiors that we were in earnest and fully capable of executing the expansion of the lab. As mentioned above, this final phase of the project was in the end approved and fully funded.

Reeducation

Heeding the straightforward advice "Educate your institution!" (McVicker, 1997), a protracted campaign dedicated to the enlightenment of our peers became an ongoing background component of the mixed-media lab project. This education was focused not only on the advisability of implementing a mixed-media lab, but also on the role of the ESL department in general. Over the course of a decade, our ESL curriculum had grown from a smattering of classes into a complete program with daytime, evening, and summer enrollments of several hundred students every year. When I took the position of department head, after 5 years as an instructor, one of my primary goals was to get our department the recognition it deserved within the institution. This involved a process of repeatedly and in varied fora pointing out such particulars as the percentage of total college enrollments that ESL students represented (a significant number); the cultural enrichment these students brought to this small, rural college; the high academic skills many possessed; and—perhaps most persuasive—the expense-to-cost ratios of the ESL programs and their overall monetary contribution (again, a significant figure) to the college's budget. Further, our energetic external promotion of the program (i.e., advertising and recruiting) meant the aforementioned benefits were steadily increasing, another point that did not go unmentioned. Eventually, I believe, all of these efforts led to a heightened awareness among our peers and superiors of the important role the ESL department and its students played in the institution, and this led to a greater general willingness to listen to our ideas (and requests for funding) for both physical and curricular improvements to our programs.

PRACTICAL IDEAS

From what I have seen, the literature on lab planning seldom offers practical suggestions for overcoming such serious obstacles to project development as limited institutional support and resources. However, in conversations with colleagues from around the nation, I have learned that such circumstances are not uncommon. (I assume, reader, that if you had unlimited resources available, you would have stopped reading several pages back.) And in such straitened circumstances, extraordinary measures may be necessary. In addition to the pointers provided in the discussion of guerrilla tactics, I offer the following principles, which our experience suggests are essential in developing a complex project under austere conditions.

Seek Consensus

The first step in any collaborative enterprise is to get consensus within your team and work outward from there. People in general and administrators in particular are impressed by consensus among teachers (this being nearly as rare and thrilling an event as seeing a unicorn on the turnpike). From this starting point you can begin to bring people on board from outside your immediate staff (i.e., those who make money decisions).

Develop Flexibility

In planning your facility, do not paint yourself into a corner. Select (or better yet, expropriate) equipment according to its utility and adaptability. This is the beauty of today's multimedia computers: Truly multipurpose machines, they can run a wide variety of programs, including audio and (to a lesser degree for the moment) video. Avoid proprietary systems; do not buy hardware according to your software. Instead, buy equipment that will allow you to run a wide variety of media and access the Internet. Buying the best machines you can afford will save money and frustration in the long run due to decreased maintenance costs and downtime. Also, beware of obsolescence. Within reason, you can see the direction in which technology is moving. No matter how great a deal you can get, do not invest in equipment that is becoming obsolete (e.g., videodisc systems; even the videotape may be on the way out with the new, greatly superior digital video disc now on the market). By the time you read this, who knows what might have come along?

Another aspect of flexibility regards your planning: Always leave room for the possibility of major changes in your battle plan. Conditions change. Allies may shift sides. Supply lines may be cut, or shorter ones may be discovered. Look for the advantage and be ready to grab it.

Be Creative

This has been a major theme of the chapter you are reading. The so-called guerrilla tactics arose out of creative problem solving and the determination to attain stated objectives in spite of obstacles. Never be swayed by the age-old argument "We tried that once and it didn't work." Such words are for cowards and small-minded bureaucrats, and most likely you are surrounded by both. Use those colleagues if you can, avoid them if not. Resistance is futile.

Employ the Utility Principle

Look at everything and everyone as a potential asset in your struggle to overcome the odds. An older computer may not run the latest programs, but it very well may run older programs that are still perfectly useful—and both machine and software probably have the added advantage of having been paid for long ago, and by someone else. In our up-to-date lab, for example, we have a pair of intrepid 286 computers that date back to the technological Dark Ages (the 1980s) but refuse to give up the fight. These machines quite capably handle some old grammar programs we have on 5.25-inch diskettes, and students still find them useful. It is my observation that most of the new programs mass-marketed as interactive multimedia on CD-ROM differ from their primitive forebears primarily in flash and fancy: In one case that comes to mind, bizarre nautical animations surround and, frankly, distract from, the same old fill-in-the-blanks. Finally, the utility principle applies not only to supplies and equipment but also to individuals, groups, departments, and so on: Consider the accomplishments of our rag-tag MISSL coalition.

Think Skeptically

Above all, take with a grain of salt the recommendations of anyone (including me) who claims to know the right way to go about achieving your objectives. No one, knows your situation better than you and your staff. No one has a clearer understanding of your resources, your objectives, your students' needs, your strengths and weaknesses. Those things, more than any outside expert, should guide you in making your decisions.

Be Daring

Developing a mixed-media language facility requires vision and hard work. Like war, it also requires long and careful planning and serious consideration of myriad variables. But despite what well-meaning writers suggest, you simply cannot predict every possibility; you will drive yourself mad and probably only end up convincing yourself that the project you have in mind is entirely beyond your means. Prepare yourself as well as you can to face the rigors of battle, but do not spend so much time readying the troops that your opponent takes the hill before you do.

CONCLUSION

At the start of this chapter I quoted Heermann's affirmation: "Turning vision into reality is hard work." I was so taken with the quote that I even paraphrased it in the preceding paragraph. But now, after spending a great deal of time reflecting on what we have achieved here at Cochise with few apparent resources—and I would emphasize the term *apparent*—I have come to realize that Heermann had it backward. Under ideal circumstances, it can in fact be easy and quite enjoyable to turn your ideas into reality. What is truly difficult, what takes not only hard work but also creativity and imagination (and cunning, agility, and a little craftiness), is to take hold of a harsh and uncooperative reality and transform it—force it into the shape you have envisioned for it. A difficult task indeed, but not impossible.

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CHAPTER 2

Designing a CALL Facility From Bottom to Top at the Military Language Institute in Abu Dhabi

Vance Stevens

INTRODUCTION

This chapter describes the computer-assisted language learning (CALL) component of a language program designed for the military of the United Arab Emirates (UAE). The Military Language Institute (MLI) is a school in the UAE where military personnel either increase their basic competency in the languages taught or prepare for further study in the country where that language is used. The UAE military contract with Amideast (a private, nonprofit organization providing educational advising services in the Middle East and North Africa) for a state-of-the-art facility using innovative technology and curriculum presented us with a unique opportunity to design a program that applied technology in appropriate ways to the teaching of languages.

CONTEXT

The MLI is an institute dedicated to the study of languages in a military context. Students are UAE military personnel who have been released from duty for a course of study that could lead to further studies abroad. At the higher levels the institute requires training in the culture as well as academic discourse in the language of the target country. English and French are the only languages taught, but other languages will be offered in the future.

The MLI is housed in a one-story building consisting of about 75 classrooms and offices ringing a central courtyard. The building has been tastefully renovated from a previously existing facility, with a central garden and walkways replacing what was once a concrete exercise yard. Air-conditioned corridors with potted plants on marble floors now link classroom spaces that previously opened to the elements. A new two-story building is being constructed nearby to expand the facility to its full capacity of about 450 students. The facility will house administration offices, eight CALL labs, and a student resource center.

Although military language training has existed for some time in the UAE, the creation of the MLI in its new quarters marks a conceptual as well as physical break with the past. The newly designed program is much different from, for example, the lockstep Defense Language Institute (Monterey, CA) model. The emphasis in our curriculum is on the communicative approach, and our facilities have been planned to promote communication not only through the curriculum, but also through design of the physical plant, as explained later in this chapter.

The students, too, are perhaps different from others in the UAE. The computer revolution has caught up with the people of the Gulf region. Internet service is available through the phone company to any resident who wants it, with the result that it is not unusual for Internet connections to be found in Emirati homes and businesses. The phone company even offers second phone lines at half the price of the first one. There is a Cyber Cafe in downtown Abu Dhabi, and the Internet is available to the walk-in public at the Cultural Foundation, which houses Abu Dhabi's public library. Editorials have appeared in local newspapers decrying the fact that educational institutions are lagging behind in connectivity as compared to what many already have at home.

Many of the students accepted into the MLI own computers; after only a brief exposure to computers at the MLI, others have taken the initiative of buying their own. There are often queries from students regarding how they can purchase their own copies of MLI software, with the result that one of our suppliers has left a stack of calling cards at the Institute and offered to sell to students at bulk prices. Even in cases when students and teachers lack prior experience with computers, they accept and adapt to the CALL component.

DESCRIPTION

Many Emiratis are sent abroad for further studies in English-speaking countries, but prior to this program, they were sent off with inadequate command of the language. Accordingly, one purpose of the MLI is to enhance the amount of intensive language training available in the home country, with the goal of ensuring that those going abroad achieve a score of at least 450 on the Test of English as a Foreign Language (TOEFL) before being allowed to depart for further studies.

The MLI has eight levels, each lasting 8 weeks. The curriculum is patterned on the six books in the *Spectrum* series (Dye & Frankfort, 1993), plus a pre-*Spectrum* basic level and an advanced post-*Spectrum* academic level. The *Spectrum* series of texts and workbooks presents a carefully graded syllabus incorporating a natural approach (e.g., an emphasis on comprehension leading to meaningful expression). Accordingly, the lessons in *Spectrum* attempt to present authentic-sounding language (e.g., radio broadcasts and telephone messages) in thematically based lessons, while giving students a feeling of success and achievement. At some point, we anticipate that *Spectrum* will be replaced with materials developed in-house. We envisage a multimedia course and have brought in consultants to help with its development.

To foster the intimate class interaction on which communicative language teaching relies, MLI limits class size to 12 students. This limitation was literally built into the design of the facility. The institute built walls to divide in half the large classrooms it inherited from the previous occupants and purchased furniture of dimensions such that 12 desks can comfortably fit in the available space, but no more. If the number of students in a class exceeds 12, then it is divided, so that many classes have fewer than 12 students. Thus the physical plant ensures optimal class size, permitting students and teachers to get to know each other and interact intensively throughout the day and throughout the program.

The students' day is broken into five periods: three core classes based on

Spectrum or pre- or post-*Spectrum* materials, a CALL lab, and an enrichment period. When students go to the CALL lab, they work with the Internet or the available software to improve their language skills. Instructors can devote the enrichment period to whatever is needed at the moment, for example, TOEFL preparation, writing, or further computer-enhanced work.

Enrichment is a key word in the philosophy of the CALL facility at the MLI. The CALL facility seeks to create an environment where barriers to the use of computers by staff and students are broken down through seamless and convenient access. Networked computers are available on teachers' desks, in classrooms, and in student labs; and teachers manage their use through teacher and student home pages on our local area network (LAN), which includes access to the Internet.

The CALL Lab

Hardware components include

- high-end WinTel-based computer workstations using Intel chips and running the Microsoft Windows operating systems with ample hard drive space
- CD-ROM drive and headsets with microphones (conducive to use with speech recognition)
- scanners
- digital photo cameras, with use of digital video cameras anticipated
- network servers, hubs, routers, cables

Software includes

- tutorials for teaching grammar, structure, or content material
- text manipulation applications, such as cloze makers
- productivity tools such as networking, multimedia, and integrated office applications
- reference materials: on- and off-line dictionaries, encyclopedias, atlases
- interactive learning applications for exploring topics or skills in the target language
- concordancing and text analysis tools

The teachers have augmented this software with their own CALL and computer-based creations, such as JavaScript forms and exercises created with such applications as Hot Potatoes (Holmes, Arneil, & Street, 1999), Microsoft PowerPoint (1997) slide shows, teacher home pages for managing class activities, materials created with The Authoring Suite (Jones & Trackman, 1998), digital video and listening activities, and Web-based projects, including student-designed home pages.

Constraints on Implementation

As one would expect in the construction of a language center almost anywhere in the world, the CALL program has suffered constraints outside the control of the academic staff. Although the following problems were successfully resolved, they had to be dealt with during the initial phases of startup.

1. Although teaching staff had been in the country for a couple of months prior to the March startup, computers were not procured during this time in adequate numbers for the preparation of these staff members. As is often the case, the few computers available had to be used for administrative tasks rather than for teacher education.
2. Despite the fact that network equipment and software were specified long in advance of startup, the logistics of procurement and delivery delayed arrival of the server and terminals until just the week before the students were due to arrive. This in turn delayed what we could prepare the staff to do in the CALL labs.
3. Even when training was conducted, it was difficult to convey to those with little prior experience with computers the exact nature of what they would be doing once our networked facility was up and running.
4. Internet access for the first 5 months of operation was limited to only one computer in the facility and was available for use solely by teaching staff. Therefore, Internet access for students could not initially be a part of the CALL lab program, and teachers themselves made only limited use of this asset.

Of particular concern were our five Egyptian bilingual advisors. The level of English of these advisors was excellent; however, as they were not native speakers, they could not be core teachers. Because our native-English-speaking teachers were initially in short supply, we decided that the bilingual advisors would teach all of the CALL lab periods. This created a certain level of anxiety in our advisors, only one of whom had had any experience at all using computers. Because there was nothing in Abu Dhabi resembling the setup they were going to be using, we were unable to give these advisors a clear impression of what they would do once classes started. That is, we could train them in use of the software, but it was difficult to convey to them how these skills were going to fit together and be applied in the classes they would be teaching. As we came close to the week of startup with no network in place, it was impossible for us even to give them a set of instructions for how the students would turn the computers on and access the server.

Given the very tight temporal constraints, we decided to use text manipulation as a means of getting the CALL classes up and running in the short amount of time available. Text manipulation software uses templates that degrade a text in some way and provide an interface through which the student can restore the text to its original state. A common text manipulation program is a cloze generator, where words are replaced by gaps and the students must supply the missing words. Other examples are whole-text deletion programs, where students must restore the original text from scratch, perhaps while listening to a digital recording of the passage read aloud; and sentence, phrase, or paragraph scrambling applications, where the components of a structure are displayed out of order and students have to restore them to the correct order.

A text manipulation component has appeal because many researchers believe that text reconstruction helps students practice prediction strategies in reading and become attentive to paragraph and sentence structure. Another strong appeal is its ease of implementation. Text manipulation software typically acts on ASCII text.

Thus it is possible to produce numerous exercises using the same texts the students are studying by importing those texts into the software templates.

Because our scanners had not arrived by the week before classes started, we mobilized the entire teaching staff at the MLI to type a corpus of texts systematically selected from the various levels of the *Spectrum* series. The object was to put in place as quickly as possible a computer-based set of materials with clear relevance to all levels of our curriculum. Several text manipulation templates were used, among them Fun With Texts (Bruzzone & Davies, 1997), SuperCloze (Stevens & Millmore, 1996b), and Hangman in Context (Stevens & Millmore, 1996a), but the mainstay of our text manipulation implementation was The Authoring Suite from Wida Software (Jones & Trackman, 1998). Besides having an impressive range of templates, The Authoring Suite allowed easy integration of sound files with the texts the teachers were producing, a compelling feature considering that so many of the *Spectrum* texts had accompanying recordings.

We contacted Prentice Hall and asked how the company would react to our digitizing these tape recordings for the purposes outlined here. Their representative gave us the go-ahead in a matter of days, as long as our use of the digitized recordings was restricted to MLI. As digital recordings, the sound files could be played on the computer as students worked on the gap-filling or unscrambling activities.

Text manipulation was appropriate to our setting for several reasons:

- Students and teachers could easily discern the relationship between text manipulation activities and the curriculum since the texts were taken directly from *Spectrum*.
- Novice computer users easily understand the concept of text manipulation and the use of templates to create various exercises from a fixed text base.
- Users can quickly implement a comprehensive amount of material across the curriculum.
- This implementation lends itself particularly well to an environment where the text base is accessible to all from a central server.
- Files created originally for text manipulation can serve as the basis for more innovative applications later—for example, for reading exercises created from JavaScript templates, or as a corpus for research and language practice based on concordancing and text analysis.

Although we had to use the texts on floppy diskettes for a short time before our server came on line, we were eventually able to teach staff the use of the text manipulation software as they learned how to access the network. Just before classes got underway, I met with our advisors for a special training session in the evening. Whereas earlier they had called for step-by-step instructions in using the software, by now the advisors were interested more in knowing how the system worked and where its components were located. Clearly, their anxiety level had substantially diminished, an indication that they were getting a clearer picture of what their role would be and that we were on the right path in setting up a system easily understood by novice users.

In a few months of MLI operation, these inexperienced advisors learned not only to function capably within the limited system set up for them at the outset, but indeed to flourish. They guided the students in browsing the text database for the exact text covered that morning by their core teacher, and helped them acquire and develop the skills of word processing, home page development, and Microsoft PowerPoint presentation. Now, when dignitaries visit our facility and need to be shown our CALL labs, we might ask the advisors to do the demonstrations. One of these advisors once expressed to me his satisfaction over finding himself in the space of a month or two demonstrating his skills in the capacity of expert after having arrived at the MLI knowing so little about computers. Now, 2 years into the program, these advisors are starting to author interactive materials in JavaScript and upload them to their own Web sites on the Internet. This development is one of our most tangible indications of the success of what we are doing.

◈ DISTINGUISHING FEATURES

The CALL facility at the MLI is unique in the Middle East, and from what we can gather through attendance at conferences, published reports, and the Internet, it appears to compare well to or even surpass other CALL facilities elsewhere in the world in appropriate use of technology in language learning.

Two factors in particular were instrumental in the initial success of this facility: planning and funding. The groundwork for the CALL facility for the MLI was laid in consultations between Amideast personnel and their UAE clients in April 1997. The facility was therefore designed from the outset taking into account the cumulative knowledge and experience of practitioners, as opposed to having evolved from (i.e., being saddled with) an outdated existing setup or a misguided concept of the role computers would play. Also, the UAE military accepted the concept virtually as proposed and did not impose unreasonable financial constraints that would compromise the plan. The result has been a mutually beneficial partnership in which the military gains its state-of-the-art language facility and the academics have had the satisfaction of conceiving and implementing a nearly optimal technology center dedicated to communicative language learning.

Multimedia Environment

One unusual feature of the MLI facility is the inclusion of the classroom in the MLI computer network. It is common in language centers for teachers and students to have access to networked computers at their respective workstations (e.g., in offices and labs), and in lecture halls. But equipping each classroom with multimedia capability is typically beyond the reach of language centers, even in the early 21st century.

Each MLI classroom is a small multimedia studio. The centerpiece is the teacher's workstation, a specially designed desk (described more fully in the next section), with a computer and 17-inch monitor. The computer outputs to both the monitor and a projector mounted in the ceiling at the back of the class, projecting onto a whiteboard that accepts marker pens and reflects the projected image with minimal glare. The teacher has a remote control device to turn the projector on and off, and also to toggle the projector between computer and video signal. Part of the teacher workstation is a cabinet containing a VCR and an audiotape player as well as an amplifier that pipes sound from the VCR, tape player, or computer to a pair of speakers installed in the ceiling. The acoustics in the small brick rooms are so impressive that special materials had to be installed in the ceiling to buffer the sound so as not to impress those in the next room as well.

The CALL labs are exactly twice the size of a classroom (9 x 9 meters); further, the front half of each lab is appointed in the same way as the classrooms, with a fully-equipped teacher's workstation, ceiling-mounted projector, and whiteboard projection surface. The remainder of the lab is furnished with 12 specially made student desks arranged in three clusters of four desks. The desks are large enough so that students can work comfortably by themselves or in pairs, but clustered so that students can face each other to converse and collaborate. The students' chairs were purchased with wheels expressly to facilitate their ability to join each other in front of the same monitor. All these touches are manifestations of the philosophy of the MLI to break from the expected rows of computers, all students facing the same way, and to deliver instead a language-learning environment that fosters communication and, in turn, enhances language learning.

Teachers' Workstations

It was unexpectedly difficult to arrange the instructor's equipment in such a way that a teacher could use it without the furniture getting in the way. Our criteria for a teacher workstation designed particularly for use with computers in classrooms were:

- Allow separate and flexible articulation and height of mouse, keyboard, and monitor.
- Do not constrain teacher to work from behind the furniture.
- Present VCR, tape player, and amplifier at workable height.
- Position computer unit within cable distance of location where teacher uses keyboard and mouse.
- Provide enough desktop space for briefcase, books and workbooks.
- Hide cabling and prevent overextension.
- Lock equipment when not in use.

We wanted our furniture to be designed so that a language teacher could get close to students, move around the room yet be within reach of the mouse and keyboard, maintain sight of the students, and at the same time see either the monitor or the projection on the whiteboard.

Because we were unable to find such furniture on the market, we ended up designing our own. We scoured catalogs and called in local vendors and draftsmen. To each we tried to describe what we wanted, though even we did not know exactly what that was. We knew we did not want a lectern, with the teacher rooted in place, having to peer around a 17-inch monitor. After considering a number of ready-made possibilities and eliciting a dozen sketches from as many workshops, we went into one of the just renovated classrooms with several teachers, placed cardboard boxes where the desks would be, and tried to anticipate where a teacher might stand while operating the keyboard, looking over the monitor at the students, or viewing the projection on the whiteboard. We moved around the room among the mock student desks, arms outstretched toward an imaginary mouse that had to be at a certain height and positioned here, or maybe over here.

In the end, we found a local carpenter who was able to put wood where our arms and minds were carving the air. The result was a low desk for the teacher with two adjustable platforms that articulate to fit flush over the desktop, although either or both can swivel out and extend the desktop in either direction. The desk is hinged to a cabinet fixed at the wall in the corner of the room to prevent overextending the cabling. In the cabinet are the VCR, tape deck, and amplifier. The teacher can stand near the cabinet, behind the desk, with the keyboard raised to waist height on the nearer platform, and look at the class over the monitor with the farther platform lowered to desk height. The class follows the teacher's mouse movements on the whiteboard. Or the teacher can reverse the position of the monitor and keyboard, placing the latter on the farther platform, which will now be raised. By swiveling that platform out, the teacher can move about in the center of the room. Because the whole unit moves in an arc on its hinge, the teacher can position himself at other points in the room as well, even all the way to the side of the class so that he can look at the whiteboard with his students (see Figure 1).

CALL Lab Furniture

We were so pleased with the resulting teacher's workstation that we had the same carpenter work on our lab furniture as well. Here again we were unable to find

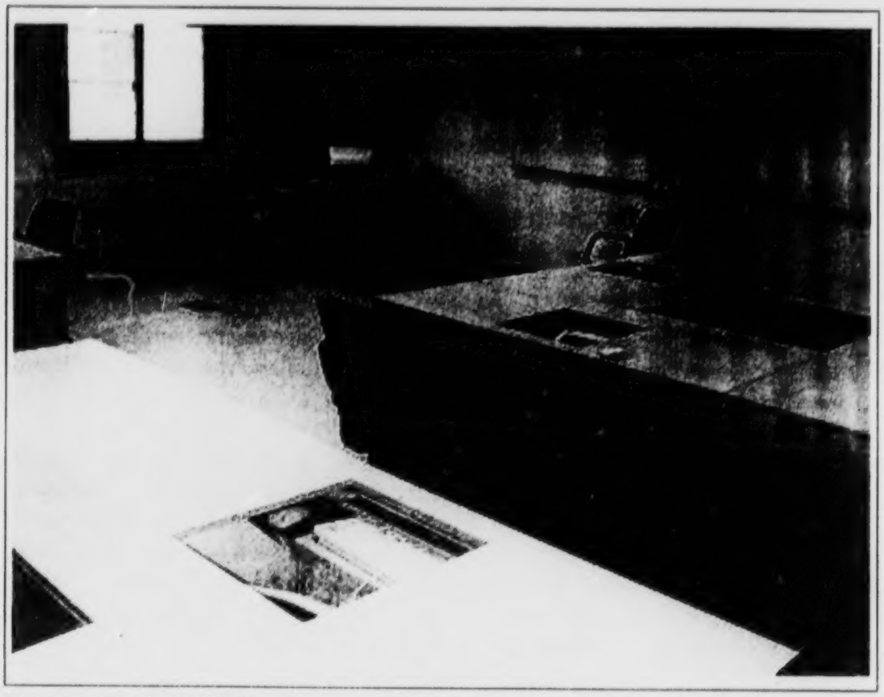

FIGURE 1. Teacher's Workstation (upper left) and Recessed Monitors in Student Desks Photo: Vance Stephens.

exactly what we were looking for in one commercially made product. For design considerations, we looked at Web sites of existing labs, and dug out archives on the topic from the electronic lists, *NETEACH-L*[1] and *TESLCA-L* (a *TESL-L*[2] branch). We came up with the following considerations for designing student CALL lab furniture that promotes collaboration and communication as well as individual learning:

- Students are clustered facing each other.
- Monitors can be adjusted to recessed or semirecessed positions for easy viewing of each other, the teacher, and whiteboard.
- Whiteboard projection is available for whole class work.
- Table size allows students to work in pairs at one station, and gives them ample room for books and writing materials.

It was easy to meet our first criterion, to design furniture of the correct size, and that could be clustered. However, I insisted on recessed or semirecessed monitors after visiting a lab at the Monterey Institute of International Studies (directed by Leo Van Lier). There, students worked at lab desks with fully recessed monitors, designed by the Nova company. We did not know if our students would prefer recessed or semirecessed monitors, and it appeared to us that the Nova equipment could let us have either configuration, but not both (and it would have to be shipped at great expense overseas). Once again, our carpenter came to our aid and designed a handsome lab desk with a mechanism on wooden rails that would allow the monitor to remain beneath a sliding surface of nonglare glass pulled flush with the desktop, or to be raised to a position just poking over the desktop.

After a year of use, we find that students use the labs almost always with the monitors in the semirecessed position. This could be because we gave them ample desk space (our third consideration), so they do not need the space taken by the protruding monitor. Students with smaller desks might prefer to use the monitors fully recessed to increase their workspace. We gave our students large desks after reading commentary on the electronic lists warning of too-small desktops. Now that our students have ample space for their books, we find that either they silently appreciate this feature, or they complain that the desks are a bit too large and distance them from their fellow students. From this we conclude that there is no pleasing some people.

Home Pages

Another unique feature of work at the MLI is that each teacher has a home page accessible from the server. This is necessary and desirable for consistency and continuity in language learning at the MLI. As students move from one level to the next, they know that they can find out about their new teacher and his class from his home page, which they can locate in a predictable spot. Also, when teachers are team-teaching or when an advisor must coordinate what he does in the CALL lab with what has just been happening in class, instantly updated home pages can serve as a convenient tool to make information available to both teachers and students (see Figure 2).

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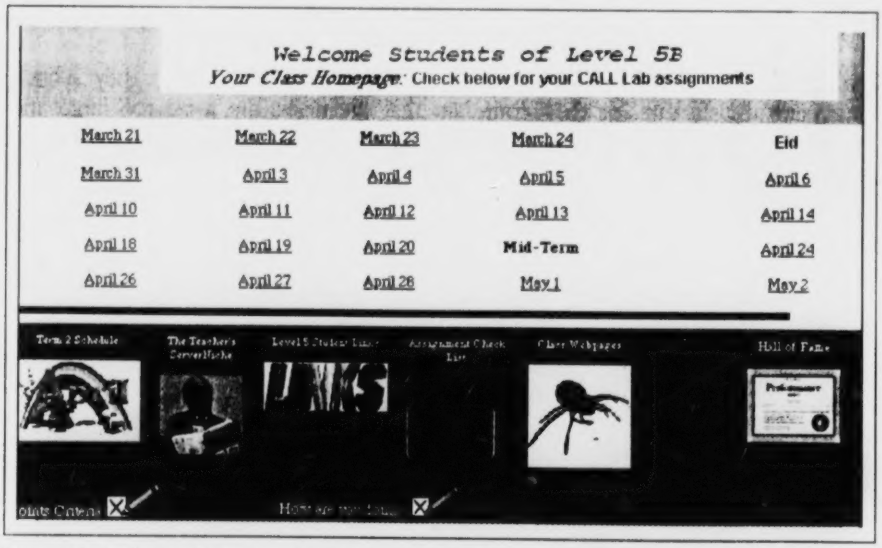
[1] *NETEACH-L*. [Electronic list]. To subscribe send the message "sub NETEACH-L yourfirstname yourlastname" to listproc@ukans.edu. (Available from http://www.ilc.cuhk.edu.hk/english/neteach/main.html

[2] *TESL-L*. [Electronic list]. To subscribe, send the message "sub TESL-L yourfirstname yourlastname" to listserv@cunyvm.cuny.edu. Example: sub TESL-L John Wayne. (Information available by e-mail to teslhelp@cunyvm.cuny.edu)

Teachers who have never made a home page before initially find this aspect the most daunting of all that is expected of them at the MLI. However, they generally find other teachers willing to share their expertise. The institute regularly gives seminars, including a popular "Homegrown CALL" series featuring teacher home pages. The seminars help each of our teachers succeed in creating a home page particular to his classes. Even the most rudimentary home pages introduce the teacher and offer a syllabus or description of the class, a class schedule or calendar showing assignments and testing dates, and at the very least, a list of students—all set in appealing graphics. As the teacher and class develop their skills, the list of students might become linked to the students' own home page creations, and the teacher is likely to extend his links to topics of interest that can be used to focus activities in the class, or to JavaScript exercises found in numerous sites on the Web, or to those created by the teacher from templates such as Hot Potatoes (Holmes, Arneil, & Street, 1999). Some teachers even adapt the templates into their own interactive pages to make them increasingly sophisticated and utilitarian. Examples of MLI teacher home pages have been placed on the Web for public view at *MLI Teacher Websites* (Stevens, 1999).

Teachers can find novel uses for a class home page. Because classes and offices are all connected on the local network, a teacher can work on class materials in his office and project them on the whiteboard in class moments later. The class can then refer to these materials later in the teacher's workspace on the server. As they familiarize themselves with the technology, instructors alter their teaching in



Welcome Students of Level 5B

Your Class Homepage: Check below for your CALL Lab assignments

March 21	March 22	March 23	March 24	Eid
March 31	April 3	April 4	April 5	April 6
April 10	April 11	April 12	April 13	April 14
April 18	April 19	April 20	Mid-Term	April 24
April 26	April 27	April 28	May 1	May 2

Figure 2. *Welcome Students of Level 5B*, a Teacher Home Page at the MLI. Dates link to descriptions of class activities (Sellers, 1999). Reprinted with permission of Mark Sellers.

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imaginative ways to accommodate and utilize the potential of such capabilities. For example, the possibilities for linking home pages are endless. As Web sites often include audio and video clips, there is great scope for finding motivating materials. Our teachers have developed methods for grabbing slow-loading materials such as sound and video files and fiddling the HTML code on the original Web site to make them work instantaneously in lab settings. This is yet another indication of the sophistication reached in only the first year of operation of the MLI. Innovations are largely teacher driven in an environment where computers and software tools are almost seamlessly available.

Organization

The scope for linkage within the MLI is also compelling. When I started teaching in the mid-1970s, we used to mimeograph materials for our classes. There was usually a teacher or a committee who made a vain stab at compiling some of these materials in a filing cabinet somewhere so that others could perhaps make use of them. Think of all the mimeographed copies that have been abandoned in rusted filing cabinets throughout the careers of teachers. Now that teachers are working in machine-readable media linked to home pages on a server, the filing cabinet is finally accessible to all (and it never rusts). Teachers can readily link to each other's materials. Teachers having just taught a level can make their work available to others who follow. And teachers reteaching the same level can preserve their work intact, leaving it available to improve on the next time around, possibly by making use of the work of others, similarly preserved and available.

Sophisticated approaches are required to manage the plethora of materials being produced at our institution. Our teachers have devised a system that entails embedding a label in a document, such as a "remark" in HTML code, for example, or as invisible white text on white background in a document. The label string is then searched for, using AltaVista Discovery (1998), configured to search on the local server. When Discovery identifies target documents, they can be clicked on and launched just like any document targeted by a search engine on the Web. For example, a search requesting Discovery to show any hypertext markup language (HTML) documents containing the string *indirect object* will kick out several exercises produced by teachers and stored in their folders on the MLI server.

Almost Seamless Interface

As teachers and students work in an environment where computers are available throughout the facility, we hope that eventually their use will become truly seamless, that teachers and students will simply reach for the nearest computer to solve whatever problems arise at appropriate junctures throughout a normal workday, and think it no more unusual than switching on a VCR to extract the data from a videotape. Indeed, the facility strives to make computers so ubiquitous that their use is taken for granted, ensuring that there is less focus on the computer and more on the language being taught. We are finding that, given the degree of receptiveness shown by our teachers to the potential inherent in this environment, technological constraints (e.g., slow network throughput, hard disks that fill up, memory limitations, and things that go wrong with the machines) are more of an impediment than misconceptions about how the technology should be used. Indeed, our teachers are adapting to their high-tech setting in more ways than we anticipated when we planned the facility, ways that continue to inform, amaze, and surprise us.

PRACTICAL IDEAS

The UAE has made a considerable outlay of funds for this facility, largely on faith, and much is made of the fact that our concentration on technology is what makes us unique, particularly in the UAE. However, several important aspects of the MLI experience can be applied in a more modestly funded setting.

Tailor the Physical Surroundings

Ensure small class sizes appropriate to the communicative approach, and design furniture to match pedagogical requirements.

Offer Seamless Access

CALL development to meet teaching and learning goals should proceed on the principle that the more seamless the access to computers, the more apt they are to be used in innovative ways. Design the facility to place computers at the fingertips of teachers and students wherever and whenever they might want to use them so that each success breeds others and the question becomes not whether to use technology, but how.

Proceed in Understandable Steps

Introduce technology as users are able to handle it. One way is to begin with text manipulation, where the interface of technology with pedagogy can be clearly understood. Allow teachers and students to move at their own pace into the wider context of interactive multimedia and the Web.

Encourage Teacher Collaboration

To facilitate teacher-produced presentations and exercises, all instructors should have home pages. Encourage teachers to query each other often by setting up an e-mail forum for that purpose. Hold regular seminars to permit teachers to share their technology and Web-based discoveries.

Keep the Curriculum Focused on Language Learning

Do not create a separate computer curriculum, in which discrete computer skills are taught in a graded manner at the various levels in a track parallel to a separate language curriculum. There should be only a language curriculum, into which computer skills are introduced on an ad hoc basis. Microsoft PowerPoint, for example, could be introduced to a Level 1 class, teaching them just enough about the tool for them to be able to accomplish the pedagogical objective. The problem with this approach, as pointed out by colleagues, is that students might progress through the program with a hodgepodge of skills, so that a teacher in Level 4 who wants his students to use PowerPoint may have some students who have had prior experience with the program and others who have never touched it. It can be argued that this would happen anyway, as students might test into Level 4 without having even heard of Microsoft PowerPoint, and students in Level 1 may have used Microsoft PowerPoint previously at home or at work.

Create a setting in which teachers regard the computer as a tool, not as a novelty, by helping them build their skills in CALL through well-informed practice, with the best tools for the jobs at hand readily available. All should bear in mind that the ultimate focus of the job is language learning, not the tools of technology, however useful and creative they may be.

Engage in Informed Practice

To overcome the desire for a separate computer curriculum:

- ESL institutions must train their teachers in how to promote pedagogy through technology use.
- Teachers, in turn, must create easy to follow step-by-step instructions to get students started with the software they need to accomplish the learning tasks and keep them focused on those tasks. With language students, the approach should not be, "Today we're going to learn to create a home page," to which the students are likely to reply, "We've already done that, teacher." Rather the approach should be, "Today we're going to describe our lives and interests. Let's see what tools we have that will help us to communicate what we want to say about ourselves."

CONCLUSION

The MLI was developed in order to provide a motivating and technology-rich environment for UAE military personnel requiring intensive study in English. Although the relationship between technology and language learning pedagogy is young, it appears that everyone involved in the development at MLI realizes benefits. Students benefit by learning about computers while learning language. Teachers seem keen on learning about and utilizing the technology to help their students, and on pushing its development to the limits of their capability. And the administrators of the program must feel it is working, as they are financing not only the expansion of our program but also the application of our model to language learning facilities elsewhere in the Emirates. Meanwhile, MLI strives to become an ideal language learning facility with a curriculum enhanced through appropriate and intelligent use of technology.

CONTRIBUTOR

Vance Stevens is CALL coordinator for Amideast's UAE/MLI Project. He was recently director of ESL software design at Courseware Publishing International, and spent 20 years working with computers while teaching ESL in the Middle East, Hawaii, and Texas. He has engaged in numerous CALL-related research projects and has been published widely in the field.

PART 2

Organizing the Curriculum

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CHAPTER 3

A Self-Access Center for Business English Learners: Meeting Individual Learning Needs

Julio C. Gimenez

INTRODUCTION

Instituto de Idiomas para la Empresa, (IDIPE—the Department of Languages for Business) of the Universidad Empresarial Siglo 21 in Cordoba, Argentina, offers business English courses to cater to the needs of university students. Variables such as work experience, language aptitude and attitude, and learning preferences may differ greatly. As a result, classes are composed of groups of learners who vary quite widely in background and needs. To make matters even more complex, teaching periods are too short and too few to cater to the individual needs and learning preferences of the students.

This situation resulted not only in learners with differing levels of linguistic ability in the more advanced courses, but also in a growing discontent on the part of the learners. By and large, learners felt that the program did not meet the needs of either the less advanced students or those who were more advanced. Owing to budgetary and curricular constraints, longer periods of instruction or extra teaching time were not possible solutions to these problems.

This case study offers an in-depth description of how a technology-based independent learning center called the Self-Access Center (SAC) was set up and is being run to meet the individual learning needs and preferences of business English students. I detail the physical setting as well as the materials that compose the center. I also highlight those aspects that make this innovative center so useful in meeting the varied needs of learners in an institution that cannot afford more periods of instruction.

CONTEXT

Students at this university have 3 years (6 semesters) of compulsory business English courses, divided into six levels of courses, ranging from false beginner to post intermediate. The first three courses aim at developing the four language skills (listening, speaking, reading, writing) in a business-related context. The last three provide training in business communication skills, such as presentations, report writing, telephoning, meetings, negotiations, and similar applications.

Before they start the program, students are assigned by exam to one of the three initial levels. Students whose level of English is higher than the third level are encouraged to take another language option (e.g., Portuguese) for the first 3 semesters of the six-course program. Although the test is quite accurate in terms of the students' linguistic abilities, it does not recognize, for instance, the learners' individual needs and preferences. In a university context like ours, in which students vary greatly in work experience (40% of the students have work experience, 25% are involved in an internship system, and the remaining 35% are preexperience), students' needs and preferences become a top priority on the learning agenda.

Individual needs and preferences are usually identified by the course instructor by means of a needs analysis conducted in the first week of the course. However, with only two 90-minute class periods a week, instructors cannot cater to the individual needs and preferences of the students in class. Faced with these time constraints and with no chance of having more or longer periods of instruction, most instructors decided to participate in the department's experimental solution, the SAC.

◈ DESCRIPTION

The SAC Circuit

Once learners have been assigned to a course, they undergo a diagnostic period of 10 days—the SAC circuit—during which their instructors closely follow their performance (see Figure 1). The aim of this diagnostic period is to detect any possible mismatch between the results of the placement test and the actual proficiency level of the learners. It also provides instructors with the chance to conduct a needs assessment and get to know their learners. Classroom activity during this period focuses on diagnostic rather than learning activities. Mismatches are resolved by reallocating the learner to the appropriate level.

Toward the end of the diagnostic period, and in collaboration with the individual learners, instructors prepare each learner's profile sheet (see Figure 2). At this stage, the purpose of the profile sheet is to identify each student's learning preferences, and strengths and weaknesses in the language competencies. This sheet also provides the basis for the independent work each learner will undertake at the SAC. As outlined in Figure 1, the learners' independent work at the SAC is combined

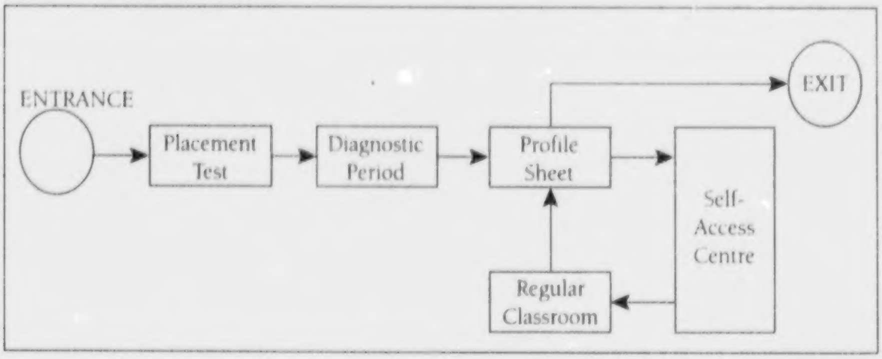

FIGURE 1. The SAC Circuit

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Sample Profile Sheet

Your Name: ______________________________
Your Course: ______________________________
Your Instructor: ______________________________
Date 1: (you started this sheet) ____________________
Date 2: (you finished this sheet) ____________________

Your Strengths:	Writing _____	Reading _____
	Listening _____	Speaking _____
	Grammar _____	Vocabulary _____
Your Weaknesses:	Writing _____	Reading _____
	Listening _____	Speaking _____
	Grammar _____	Vocabulary _____
When you study, you like:		
	Writing _____	Reading _____
	Listening _____	Speaking _____
	Doing _____	Watching _____

Action Plan

Weaknesses	Action

FIGURE 2. Sample Profile Sheet

with their regular classroom work. The results from this combination are transcribed onto the profile sheet before they sit for the exit test and are promoted to the next level.

The Physical Space

The SAC has been set up on the fifth floor of the same university building where the Department of Languages for Business is situated. This location brings a sense of unity to the department's activities and sets the right atmosphere for cooperative work.

Figure 3 illustrates the physical arrangements of the SAC. Its structure is quite simple, consisting of six multimedia personal computers, 10 individual booths for listening activities, a television set, and a VCR. In each of the listening booths, there is a tape recorder and a set of headphones. The headphones are connected to the audio output of the VCR to facilitate working on videos without disrupting other activities in the center.

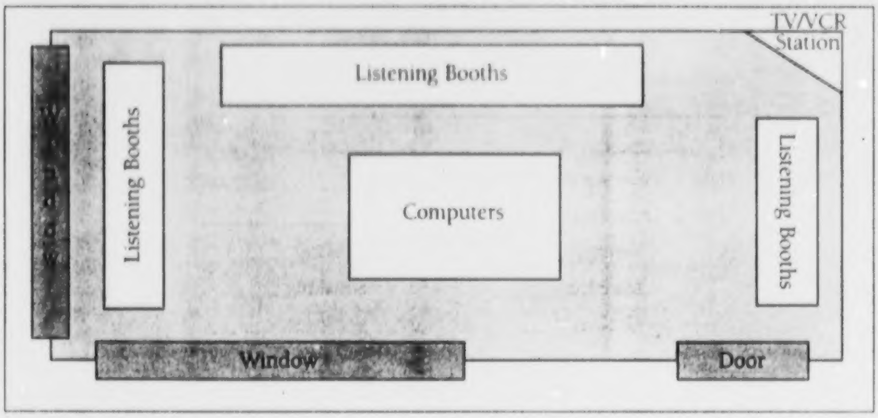

FIGURE 3. The SAC Layout

The SAC Materials

Materials in the SAC consist of hard and soft items. Soft materials comprise audiotapes, videotapes, and CD-ROMs; hard materials are composed of activity books or sheets learners follow when working with the soft materials (see Figure 4). This division of materials has proved highly useful for organizing a coding system that classifies materials according to the skill they focus on, the area they exercise, the level for which they are intended, and the number of the exercise. Table 1 illustrates some of the materials that form part of the SAC, classified by level.

Working at the SAC

Once the placement period is over, learners are equipped with all the diagnostic tools they need to start their independent learning process at the SAC. The profile sheet shows the weaknesses they need to work on as well as a plan of action to follow. They

TABLE 1. SAC SAMPLE MATERIALS

Level	***Audiotapes***	***CD-ROMs***	***Videos***
False beginners	*English File 1* (Oxenden, Seligson, & Latham-Koenig, 1997)	Business Challenges (O'Driscoll & Macburnie, 1996)	*International Challenges* (O'Driscoll & Scott-Barrett, 1996)
Preintermediate	*Getting Ahead* (Jones-Macziola & White, 1993)	Multilevel Business English Programme, Disk 1 (Badger & Menzies, 1995)	*Staying Ahead* (Bampfield, 1995)
Intermediate	*Listening Tasks* (Schecter, 1984)	Multilevel Business English Programme, Disk 2 (Badger & Menzies, 1995)	*Functioning in Business* (Lance-Knowles & Bailey, 1990)
Upper Intermediate	*Executive Listening* (Waestle, 1996)	English for Business (1996)	*Business Assignments* (Casler & Palmer, 1994)

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are also required to keep a diary of candid entries in which they can record their progress. Learners' work at the SAC is not evaluated in any way. If learners need help with an activity, they may consult the SAC assistant or their instructor.

The profile sheet also serves as a guide for the SAC assistant to select the appropriate materials for each learner. As shown in the sample profile sheet, the activities at the SAC concentrate on three of the four traditional skills (reading, listening, and speaking) and two other areas of linguistic knowledge (grammar and vocabulary).

As described above, the SAC holds only 16 learners at a time, so learners have to book 1-hour time slots to work at the SAC. When they come to the center, learners bring their profile sheets with them; the SAC assistant, in consultation with the learners, chooses the corresponding hard and soft materials with which they should work. When learners have finished their work, they take another 5–10 minutes to make a record of what they have done and what progress they have made. These entries in their progress diaries are kept as simple as possible so that the learners as well as their instructors can have easy access to the information.

DISTINGUISHING FEATURES

Meets Individual Needs

In the traditional language laboratory, students usually follow instructions given by their teachers, and all students engage in the same activity. For instance, students are required to listen to a master tape while working on exercises—usually repetition of sentences, or drills of phonemes or specified structures—leaving little room for independent work or individual needs. The SAC, on the other hand, caters to the individual needs of learners, who can work on their specific weak areas at their own time and pace. In addition, multimedia exercises on the computers tend to be interactive and engage learners in a variety of activities, only one of which might be repetition.

Respects Individual Students' Learning Preferences

Another distinguishing feature of the SAC is its versatility. By combining sound and image (as in videos) in an interactive way (e.g., with multimedia CD-ROMs), the SAC activities provide a great variety of attractive inputs for learners with diverse learning preferences. Some activities cater to visual learners, others to auditory learners and still others to the kinesthetic type of student. In addition, most SAC activities include exercises that can be used with groups of mixed ability and need.

Fosters Independent Learning and Responsibility

The greatest benefit the SAC has brought to learners is that they have grown more independent and responsible for their own learning processes. By the same token, most learners have become more participatory in class and are now able to make sound decisions about how best to profit from both in-class and out-of-class activities.

Facilitates Process-Oriented Evaluation

Finally, the incorporation of the SAC into the learning path has had a significant impact on the evaluation practices of the department. At the end of the term, learners are evaluated not only through formal instruments, such as written and oral tests, but also using more informal tools such as their profile sheets and progress records. In this way, the evaluation of learners' performance becomes more comprehensive, including both their achievements and their own learning processes.

PRACTICAL IDEAS

Set up a Self-Access Lab

In an ideal situation, there should be as many multimedia computers as possible. Most learners prefer to work with CD-ROMs because of the versatile nature and flexibility of the activities in them. In addition, many CD-ROMs offer the possibility of working at different levels of ability and linguistic proficiency. Thus, by means of these multitask activities, learners can progress from one level to the next within the same content area.

In practical terms, however, it is not always possible to have one multimedia computer per learner. In our situation, we have only six computers for about 800 students. A way around this situation is to have students who need to practice in the same or similar areas work in pairs. In our context, this means 12 students working on the multimedia personal computers at a time. Another possibility is to extend the facility hours as much as possible. In general terms we have discovered that the fewer the computers, the longer the SAC has to be open to learners.

Provide Enough Self-Access Materials

Materials are another area of concern. Ideally, there should be as many CD-ROMs as personal computers, and as many audiotapes as listening booths. There should also be as many copies of activity books as audiotapes. In our case, videotapes do not present a problem as there is only one VCR in the SAC, and therefore only one activity book per video is required. Generally, however, having an adequate supply of both the hardware and the software necessary for optimal operation of the self-access facility, especially when starting up, is far from commonplace. Time slot management can provide a solution to the problem of materials. If the time slots are carefully distributed, mixing learners' levels throughout the facility's hours, it will help reduce the number of problems created by the lack of materials.

Another solution is the use of activity sheets. Such sheets at the SAC have been the product of the hard work and cooperation of all teachers in the department. Each instructor prepares one activity sheet per week. Several sheets may be based on the same input, for instance, a listening text. The text is at an intermediate level, but the exercises on each of the sheets are graded by degree of difficulty according to the level of the learners for whom the sheet is intended (see Figure 4 for an example).

As a word of warning, I would suggest making a copy of the original audio- and videotapes used at the self-access facility. Keep the original copies safe in case the one copy for the SAC gets spoiled. This is perfectly allowable by copyright laws.

Sample SAC Activity Sheet

Your Name: ______________________________

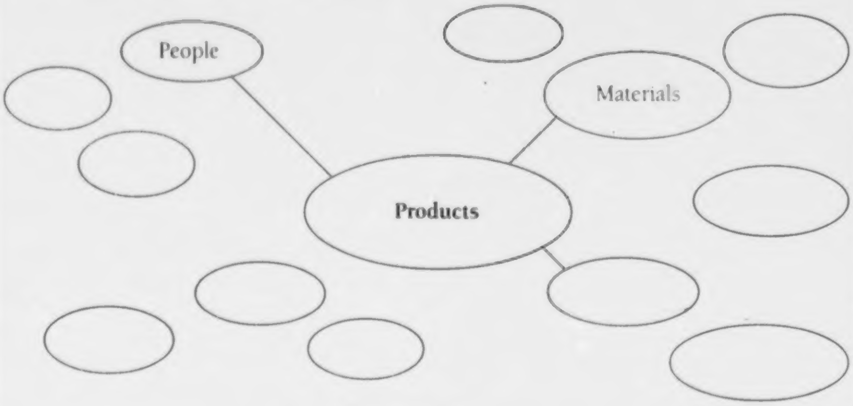
Your Course: ______________________________

Your Teacher: ______________________________

Date: ____________________ Sheet No.: LIS/VOC/019

Once you have finished listening to the dialogue, do the following exercises:

1) Can you complete the spidergram?



2) Can you complete this list of related words?

Verb	Noun	Adjective
....	production	....
promote	....	....
....	....	economical

What have you learned?

____

____

____

FIGURE 4. Sample SAC Activity Sheet

Consider Whether Labs Should Be Compulsory or Elective

One way of encouraging learners to work at a self-access lab is to make it a compulsory activity. However, our experience has shown that learners work more efficiently if the facility is an elective activity. In this paradigm, it will take longer for all learners to become aware of the benefits that working at a self-access lab can bring to them. In our particular case, it took three semesters for most learners to realize the center's value. Although it takes longer, the advantage of this option is that it encourages learners to become more responsible for their own learning.

Configure Labs for Multitasking

From the point of view of the activities a self-access lab can offer, multitasking seems to be of prime importance. Most CD-ROMs offer activities at different levels of proficiency on the same subject matter or topic. The instructors can assign different levels according to the learners' needs.

From the perspective of skills and strategies, a self-access lab can enhance opportunities for learning and practice in both language and content areas. Learners working at the SAC have the chance to practice not only their language skills (reading, listening, and speaking) but also their business communication strategies, depending on the materials used. Specialized materials produced on CD-ROMs present numerous examples for learning and practicing presentations, meetings, negotiations, telephoning, and other business skills. These materials provide learners with endless possibilities for practice in their own field of knowledge.

CONCLUSION

A SAC like the one described in this case study can prove quite useful in terms of meeting learners' individual needs and learning styles. In addition, the integration of the SAC into the business English training program has paved the way for process assessment, in which formal tests are one component rather than the only component. This is the future direction that the SAC will probably take.

The most important contribution that the SAC has brought to the program, however, lies in its role in developing learners' independence and responsibility for their own learning processes. By working at their own pace and at times of their own choosing, most learners have become more aware of their roles in the learning process. By the same token, they have grown into full participation in a process in which their teachers are only a part.

CONTRIBUTOR

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CHAPTER 4

Web Integration: A Model for Task-Based Learning

Katharine Isbell and Jonathon Reinhardt

INTRODUCTION

Task-based learning provides students with motivation to use language as they perform tasks designed to facilitate language practice (see Johnson, 1979; Nunan, 1993). A project-centered approach emphasizes learning through the accomplishment of a variety of such tasks to achieve an end product (see Fried-Booth, 1986; Henry, 1994). The project context for individual tasks creates a powerful environment in which the students' personal experience contributes to the learning process. Moreover, a course designed around tasks and projects is the converse of a more traditional course in which skills are taught in a linear fashion, usually from simple to more complex.

Because project-based learning is not necessarily bound by the selection and grading of content, but relies on task variety, we felt that the use of projects in our English course at Miyazaki International College (MIC) would allow us to integrate the goals we had to consider in our course design, including building environmental awareness, developing computer and academic skills, and increasing English language proficiency.

In this case study, we explain the process we used in designing, implementing, and evaluating Applied Information Science and Environmental Issues (AISEI), a task-based, Web-integrated course centered on projects. We describe the student- and instructor-created products of the course, giving special attention to the class Web site, which served as textbook, interactive study guide, and assessment portfolio. We also outline some aspects of the semester-long classroom-based research we conducted to determine student reaction to the Web-intensive nature of the course. Finally, we offer practical ideas for Web site development, the adaptation of projects, and course evaluation.

CONTEXT

Miyazaki International College (MIC) is a new Japanese 4-year liberal arts college located on Kyushu in southern Japan. The entire curriculum, except for Japanese language courses, is taught in English. One of the distinctive features of the college is its use of content-based instruction (Brinton, Snow, & Wesche, 1989) for all first-

and second-year classes. These classes are team taught, generally by a content specialist and a language specialist, using a collaborative model (Sagliano & Greenfield, 1998). The college encourages the use of cooperative and collaborative activities to help develop critical thinking skills, decision-making skills, and learner autonomy (Bonwell & Eison, 1991). To foster active learning strategies, classes are small, ranging from 4 to 20 students.

Students enter MIC with low- to intermediate-level English proficiency. They have usually had at least 6 years of prior English study. A few of the students have had experiences in an English-speaking country, but most are recent graduates of Japanese high schools. Students typically spend 15–18 hours a week in classes with instructors who are, for the most part, native speakers of English.

Two computer classes currently are taught in the first year: Introduction to Applied Information Science (IAIS) and AISEI. IAIS is not a prerequisite for AISEI. However, very few students come to MIC with any experience with computers, and the first few classes of both courses include typing and basic keyboarding instruction. AISEI is generally taught in the second semester, when students have experienced one semester at MIC already, have become accustomed to the college's teaching and learning expectations, and have gained a basic understanding of the instructional goals and methodologies used at MIC.

DESCRIPTION

The Course

The aim of AISEI, as described in the *MIC College Bulletin* (1998), is to examine "the significance of computer technology and [its] effects, both positive and negative, upon the environment" (p. 48). AISEI provides basic computer literacy skills to students who may not have taken an introductory Applied Information Science (AIS) class, and it refines and expands the computer skills of those students who have taken an earlier computer class. Moreover, the stated mission of the college is for Japanese students to become proficient in English through the instruction of course content. We expect AISEI students to reach a basic level of proficiency as they use English to understand, discuss, and write about simple computing concepts, environmental computing issues, and the progress and outcomes of the projects they undertake.

The AISEI class described here met for 1 hour and 40 minutes three times a week for 15 weeks. There were nine first-year students with low intermediate English language skills in the class. All but one student had taken AIS the previous semester and had basic computer skills, including word processing and using e-mail. The class was held in the college computer lab containing Macintosh Power PCs, and students generally were seated in front of computers the entire time. The instructor's computer at the front of the class was connected to a light box projector so that images could be projected onto a large screen in the front of the room for teaching purposes.

We decided that all course materials would be on the Web, partly because we felt that the nonlinear, integrated character of a task-based or project-centered syllabus lends itself perfectly to the nonlinear nature of a Web site. Project descriptions and task instructions, learning activities, support materials, and Internet resources could be hyperlinked as needed for the class. By taking advantage of emerging Web authoring technologies such as JavaScript (1998) and common gateway interface (CGI), we made the Web-based tasks and activities as interactive as possible. We wanted the Web site to guide the students as well as support the course goals.

Committed to a project-centered approach, we introduced, practiced and expanded the language and computer skills and computer technologies as student needs became apparent during a project. Environmental issues functioned as the overarching theme for all of the projects. Web integration of the course materials helped us solve three additional challenges. First, the diverse nature of the course goals meant there were no appropriate commercial materials. Second, in keeping with the environmental theme, we decided that the class would be as paperless as possible and that printing, in general, would be discouraged. Third, we had observed that all too often a critical examination and modification of course design are performed only at the end of the teaching cycle, leaving little room for alteration and design experimentation (see Daloglu, 1998). Therefore, we incorporated on-line data collection methods into the class to help us formatively evaluate the design and implementation of the AISEI course (using the guidelines described by Shetzer, 1998).

The Projects

We designed the projects to encourage student autonomy. Projects undertaken at the beginning of the semester were highly scaffolded with step-by-step instructions and minitasks to create a low-risk learning environment in which students could become comfortable learning autonomously. Early projects usually involved the whole class; later projects were completed by small groups or individuals. In general, we gave the students a basic outline of each project and the students selected an aspect they wanted to work on. They located and organized materials through a series of tasks and presented the end product within an agreed-upon time frame. Project grades were determined according to criteria often decided on by the students themselves. Responsibility for each project's success rested in the hands of the students as they applied their learning to real problems. Thus, the projects allowed students to express their interests and to demonstrate their capabilities in an independent environment. Moreover, the projects motivated and involved the students in the class. The following section describes briefly the projects the students completed during the 15 weeks.

Environmental Change Documentary Project

Students documented the changes that occurred to an environment over time by photographing the same location once a week for 10 weeks. These environments encompassed construction sites, farm fields, a river, and natural areas. In addition, students maintained an electronic photographic log in which they kept their written observations of the weekly changes. Using this text, students created a Web site containing a description and a slide show of the recorded changes. Students had to develop word processing (tables), scanning, and Web authoring skills to complete the project.

Environmental Dictionary Project

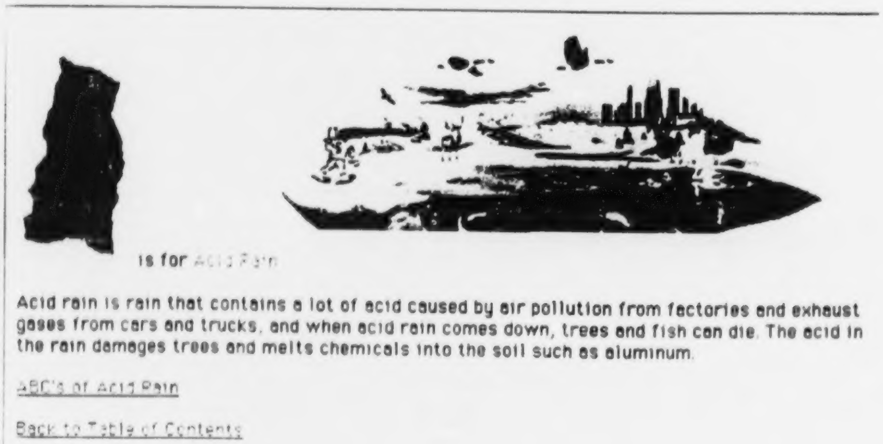
Students collected and organized environmental terms and definitions alphabetically into a printed dictionary format, later developing a dictionary Web site (see Figure 1). Students had to develop word processing (copy/paste and formatting), e-mailing (attachments), Web researching (site evaluation), Web authoring and editing skills—using hypertext markup language (HTML) to make document and graphics links—to complete the project.

Computers and Paper Project

Students conducted research and collected data on paper use within the college community, later sharing their findings via e-mail with ESL students in an intensive English program in the United States. Working individually and as a class, students wrote a report in which they described the research project, stated a hypothesis, reported the results, interpreted the results, and concluded whether the original hypothesis was supported by the research. Students uploaded the report to their Web pages. They had to develop word processing, e-mailing, Web researching, Web authoring, and HTML editing skills to complete the project.

Habitat Exploration Project

Students working in small groups decided which of three local habitats (city, beach, or forest) their group would investigate. Each student was responsible for observing and documenting the habitat using one of several sensory modes: sight, sound, touch, smell, and taste (see Figure 2). After additional research, each group created a print newsletter, a video, and a multimedia Web site, all of which re-created the habitats. Students had to develop word processing, graphics manipulation, desktop, Web publishing, Web researching, Web authoring, HTML editing, and video production skills to complete the project.



is for Acid Rain

Acid rain is rain that contains a lot of acid caused by air pollution from factories and exhaust gases from cars and trucks, and when acid rain comes down, trees and fish can die. The acid in the rain damages trees and melts chemicals into the soil such as aluminum.

ABC's of Acid Rain

Back to Table of Contents

FIGURE 1. The Environmental Dictionary Project: *A is for Acid Rain.* Reprinted with permission of the fall 1998 AISEI class.

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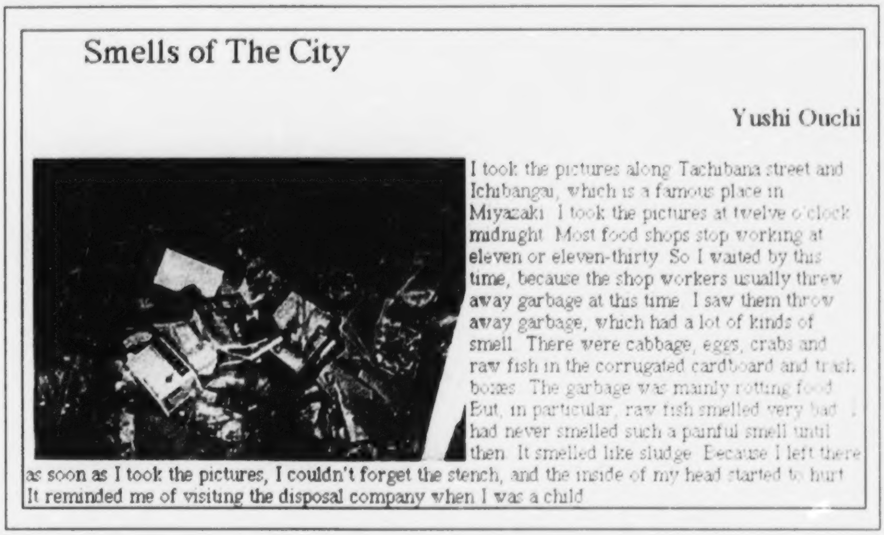

Smells of The City

Yushi Ouchi

I took the pictures along Tachibana street and Ichibangai, which is a famous place in Miyazaki. I took the pictures at twelve o'clock midnight. Most food shops stop working at eleven or eleven-thirty. So I waited by this time, because the shop workers usually threw away garbage at this time. I saw them throw away garbage, which had a lot of kinds of smell. There were cabbage, eggs, crabs and raw fish in the corrugated cardboard and trash boxes. The garbage was mainly rotting food. But, in particular, raw fish smelled very bad. I had never smelled such a painful smell until then. It smelled like sludge. Because I left there as soon as I took the pictures, I couldn't forget the stench, and the inside of my head started to hurt. It reminded me of visiting the disposal company when I was a child.

Figure 2. The Photographic Habitat Exploration Project: *Smells of the City.* Reprinted with permission of Yushi Ouchi.

◈ DISTINGUISHING FEATURES

The Course Web Site

The course Web site played a central role in the class, encompassing much more than a traditional course Web site with a syllabus, readings, and assignments. As a course textbook, it held instructions, explanations, readings, and interactive activities based on content and language. Both a workbook and a study guide, the site also included a collection of specialized resources for students to be accessed any time through the World Wide Web. Finally, it served as a portfolio for the student-generated Web sites produced for the projects. A sample page of the site may be accessed at *Applied Information Science and Environmental Issues* (1998). It includes six main sections, described below. (See also Figure 3.)

1. *This Week* showed the current week's teaching plan for each day with links to tasks, activities, and projects. Students were encouraged to go to this page at the beginning of each class to get an overview of the day's tasks. As part of the Environmental Change Documentary, students made entries in their electronic photographic logs to begin class every Monday. Every Friday, they completed that week's Web-based feedback log. As the semester progressed, we were able to observe that once students had logged on, they would open the class Web site to *This Week* and begin working on one of these two activities without being directed. In addition, after the students completed a task or activity during class, they would refer to *This Week* to go on to the next activity.
2. The *Calendar* page acted as both an archive of past lessons and as a planner for future classes. Students who were absent remarked that they used the *Calendar* to help them complete work they might have missed.

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We believe that students might even have viewed the *Calendar* page with a sense of accomplishment because it graphically showed everything the students had done over the semester.

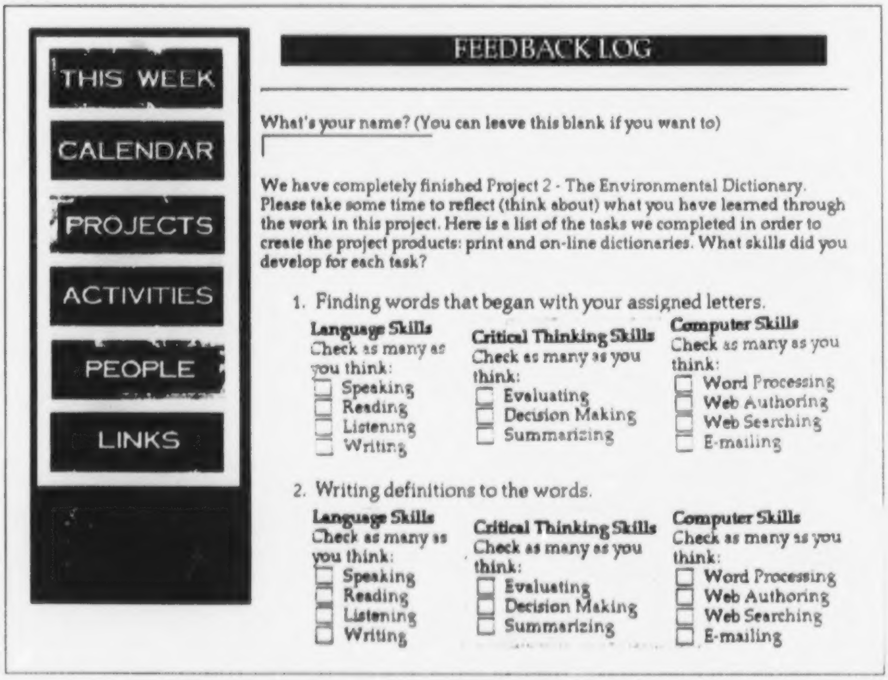
3. The *Projects* page contained short summaries of the projects, links to full project descriptions, and links to the student-produced project Web pages. The full descriptions included instructions for the completion of the project as well as links to activities and tasks directly related to the content of the project. Each description began with a short series of questions designed to get the students thinking about the issues to be covered, followed by a step-by-step procedure for completing the project. Steps for which the students needed additional help were linked to related activities. For example, when students distributed the paper-use logs to MIC faculty, we wanted the students to be able to explain the purpose of the project and request assistance from the faculty. We created a page of specific language functions the students might find helpful in completing this task successfully, and linked it to the Project Three description. When the student clicked on a function, such as Introduce Yourself, a window with suggested language popped up. As the projects progressed, these pages usually required alterations as we added and revised tasks and activities to meet changing student needs.
4. In addition to being linked to the corresponding projects, activities were also accessible from the *Activities* page. This page archived all the activities done over the semester in chronological order. Some of the activities were self-directed, that is, we expected the students to do them on their own outside of class. Self-directed activities included supplemental readings and grammar lessons topically related to the project content. These activities made extensive use of fill-in forms and JavaScript. One example of this was an interactive reading on paper recycling in which difficult vocabulary was defined in pop-up windows. Another example was a five-part lesson on passives that provided instant feedback on student responses to multiple-choice, matching, and fill-in-the-blank activities.
5. The *People* page had the linked e-mail addresses and home page URLs of all the class members, including the instructors. (The students who had taken AIS previously already had basic home pages.) At the bottom of the page was a password gateway. When the student typed in his or her password, a personal attendance and grades page appeared. The grades were shown in a table containing the point breakdown for each component of a project. Students could quickly see how many points they had compared to the total number of possible points. Students repeatedly expressed their appreciation at being able to see their grades at any time.
6. The *Links* page contained resources that we thought the students might find useful in completing the projects. These resources included search engines, dictionaries, language sites (e.g., *Dave's ESL Cafe*, Sperling, 1997), and content-related sites (e.g., the *Sierra Club* pages).

As instructors, we found that the course Web site provided an additional benefit. The college requires detailed faculty portfolios documenting teaching strengths and achievements from teaching staff being considered for contract renewal or promotion. We were able to present many of the basic elements that make up a thoughtful, well-developed faculty portfolio (see Seldin, Annis & Zubizarreta, 1995) in a vivid and detailed manner through the Web site. Some of these elements included student work showing evidence of improvement based on instructor feedback, descriptions of efforts to improve the class and teaching, representative course materials supporting the mission of the college, and documentation of teaching development activities.

Formative Evaluation

We wanted to determine if there was a shared perception by students and instructors as to the effectiveness of the course design and implementation. The data collection methods consisted of, but were not limited to, weekly Web-based student feedback logs focusing on changing areas of investigation, direct observation of the students, and their spontaneous interaction with the Web site.

When designing feedback items, we focused on student attitudes and reactions and used simple fill-in forms created with HTML, such as text areas and pull-down select menus, to create the feedback logs. We found data collection particularly easy because of the Web-based nature of our data collection instruments. Once we had an HTML template of an on-line feedback log utilizing fill-in forms and menu selections, substituting items each week took only a few minutes (see Figure 3).



What's your name? (You can leave this blank if you want to)

We have completely finished Project 2 - The Environmental Dictionary. Please take some time to reflect (think about) what you have learned through the work in this project. Here is a list of the tasks we completed in order to create the project products: print and on-line dictionaries. What skills did you develop for each task?

1. Finding words that began with your assigned letters.

Language Skills
Check as many as you think:
☐ Speaking
☐ Reading
☐ Listening
☐ Writing

Critical Thinking Skills
Check as many as you think:
☐ Evaluating
☐ Decision Making
☐ Summarizing

Computer Skills
Check as many as you think:
☐ Word Processing
☐ Web Authoring
☐ Web Searching
☐ E-mailing

2. Writing definitions to the words.

Language Skills
Check as many as you think:
☐ Speaking
☐ Reading
☐ Listening
☐ Writing

Critical Thinking Skills
Check as many as you think:
☐ Evaluating
☐ Decision Making
☐ Summarizing

Computer Skills
Check as many as you think:
☐ Word Processing
☐ Web Authoring
☐ Web Searching
☐ E-mailing

FIGURE 3. Two of 10 Categories on *Feedback* Page for AISEI course *Applied Information Science and Environmental Issues*. Reprinted with permission of Katharine Isbell and Jonathon Reinhardt.

As an example, when students were asked to consider on-line activities, their responses in the logs indicated that they gave greater importance to the self-directed nature of on-line activities than to the perceived difficulty of the tasks. This result seems crucial and has implications for design. If teachers give more attention to a user-friendly design and provide better initial explanation of the on-line activities, students might perceive learning through them to be less difficult.

Another log asked students about the course Web site. Their responses indicated that a major reason why they liked the site was that it helped them stay organized and focused throughout the semester. However, students mentioned that they disliked or seldom used the *Links* and *Activities* pages. These comments might result from the fact that the teachers themselves rarely used either page in class demonstrations. In subsequent years, we will have the students develop this page. If the students feel a certain degree of ownership of the page, they may be more likely to use it.

Another factor in our evaluation was that throughout the semester we arrived in the classroom well before the students in order to observe students' direction-free interactions with the computers. We noted that students' use of the course Web site increased over time. At the beginning of the semester, students were reluctant even to turn on their computers. Toward the end of the semester, we observed that students would often go to the course Web site first before looking at their e-mail or working on something from another class. During class we also watched students navigate through the Web site, and took note of problematic design features.

Each week, we collected, collated, and analyzed student feedback. We kept a weekly Web-based teacher's journal in which we critically reflected on the teaching and learning events of each week. Immediate collection and organization of data helped us make adjustments to the course throughout the semester.

PRACTICAL IDEAS

Develop the Course Web Site With Care

True Web integration requires a strong commitment on the part of the teacher-designer; having a syllabus and a list of course-related links on-line is not enough. There are many factors to consider in developing a course Web site. First and foremost, instructors should remember that the students are the audience and the consumers of the course. Thoughtful and simple design can actively engage students and prevent frustration. Here are some questions for teacher-designers to consider:

1. Is the Web site appropriate for your class?

   Our class met in the computer lab for all its class periods; accordingly, our course could be almost entirely Web-based. An on-line schedule was feasible because we knew students would access it every class. For classes with limited computer time, a course Web site functioning as a project center, activity workbook, and/or student portfolio might be more appropriate.

2. What technical skills and tools do you need to make the site?

   We used BBEdit (1996) and Adobe PhotoShop (1996) to create our Web site. Although most WYSIWYG (what you see is what you get) HTML editors do not require any knowledge of HTML code, we recommend at least a basic understanding of it, especially if you want to incorporate JavaScript elements.

JavaScript, fill-in forms, and CGI technology are not overwhelmingly difficult and can offer a level of interactivity that makes your Web site more than just a digital version of your class syllabus. We easily found free source codes to meet our design needs at the many Web sites and tutorials created for the teacher-designer.

Our students' computers had limited memory, a factor that precluded them and us from using the latest dynamic HTML elements and Java, and forced us to use HTML code standards that matched the browser our students were using, Netscape Navigator (1997). If you are unsure of your system capability, consult your local technical support person. Some schools offer workshops and consultants for teacher-designers.

3. Does the site need security?

   Because our site was linked from the college site, it was entirely public. We used JavaScript password gates for sensitive student pages, such as grade and attendance pages. However, a Web page does not have to be linked externally; that way it can be accessible only to those who know its file location.

4. What about links?

   Thoughtful link placement can add structure to a page. Too many links on one page can be confusing; too few links take away a sense of interactivity. A teacher-designer should always test a new page or site by going through it from the user's point of view, following available links. We have observed that our students sometimes seem to suffer from "clickitis"—randomly clicking on any available link and glossing over text. They seem to read more carefully if a link is in a sentence, as opposed to being set apart. In reading activities, however, sentence-integrated links can distract and slow down reading speed.

5. How will the students react to the text?

   It is important not to overwhelm students with text—especially students with lower level language skills. Keep the language level appropriate, and put important information at the top of the page. It is often better to split up text or instructions into several pages, giving students a sense of accomplishment as they navigate. Updating or changing the information frequently will motivate students to access the page.

6. How much Web experience do the students have?

   Until students are comfortable with the Web site, allow time for student familiarization each time students use the site. Some students, especially if they have little previous experience with computers, might lack confidence to explore a Web site. Lessons focused on useful computer vocabulary, effective Web-searching, and developing Web-evaluating skills can increase students' abilities and understanding of the Web.

Plan Web-Integrated Projects Well

All stages of any project-centered classroom activity, from introducing the project to grading the project's end results, need to be carefully planned out. Although learner autonomy is a goal of project work, we believe that carefully structured guidelines and a supportive environment are crucial to achieving this goal.

Task-based learning can produce products other than Web sites, including print and other media, such as video. We found that sufficient skills training time, based on the students' needs and abilities, must be considered when planning the projects. The projects we created for the AISEI course can be easily adapted to any content or class, as described below.

- The Environmental Change Documentary can be adapted to studying architecture, urban life, seasonal change, or even human change over time. Setting up the project to span the entire semester automatically builds in longitudinal change as an object of study. Students can conduct "then and now" research, or produce reflective writing, structured reports, and newsletters. Slide show JavaScript code can be incorporated to make interesting and exciting Web sites.
- The Environmental Dictionary Project can easily be adapted to a wide variety of levels and subjects. The 26 letters of the English alphabet can provide an effective rubric for searching about a single subject or topic. For example, students could brainstorm possible career choices and then search the Web for useful sites about each field or profession to create a career dictionary. Students could come up with 26 international dishes, write recipes, search for related sites, and make a great cookbook.
- The Computers and Paper Project took a current topic and made it meaningful in the students' lives. By examining a topic locally, creating a group survey or study, and presenting the results on line, students had an instant electronic soapbox from which to present their opinions on the issue. Students understood the idea of audience more readily when they realized that project partners at another school were reading and responding to their research. Furthermore, using computers as a tool to organize, present, and conduct critical investigations builds skills students can apply in and out of the classroom. Surveys are excellent tools for authentic language practice.
- The Habitat Exploration Project allowed students creative freedom to apply and integrate their computing skills within the broad parameters of a habitat study. Active learning took place as students physically explored the habitats using the five senses to guide observations. Splitting the project tasks encouraged peer learning and cooperative skills development. For example, after conducting country-specific research and imagining the sensory input a visit would trigger, students could create a country Web site, magazine, and video. This framework could also be used to create a local guidebook with teams covering local sights, restaurants, museums, and neighborhoods (see the Kyoto Restaurant Project described by Robb in chapter 10). Using different media lets students see the power and weaknesses of each format.

Encourage Action Research

Teacher-initiated action research is one readily available tool teachers have to improve classroom performance. Action research helps the teacher understand the complex and varied interactions that make up a language classroom at a particular time with a particular group of students. By definition, action research cannot make strong theoretical claims, but it can provide a framework in which an instructor observes specific phenomena and reflects on their effect in the classroom (LoCastro, 1994).

We used the following guidelines from LoCastro (1994) in carrying out our action research. First, the teacher-researcher should identify an area of investigation. This can be a clearly observable problem existing in the classroom or it can be a *what if* question about a teaching activity or methodology. Next, the teacher-researcher develops a research plan and begins to systematically gather data on the area to be investigated. Library research and networking with colleagues are also part of the information-gathering process. Once the teacher-researcher has completed the data collection step, it is time to analyze and reflect on the results.

In any action research project, it is important to view the process as cyclical. After the teacher-researcher has reached some conclusions, teaching behavior or course design can undergo changes based on those conclusions. The process then begins again as the teacher-researcher examines the implemented changes in a systematic way.

CONCLUSION

In this case study, we have attempted to provide an overview of our experiences in developing, implementing, and evaluating AISEI. Although we felt that the Web site was successful overall in its role as textbook, interactive study guide, and class portfolio, we have noted and will implement design changes to the site in the future. Taking data from the formative evaluation into consideration, we found that a task-based, Web-integrated course centered around projects effectively met the challenge of the three course goals: increase computer proficiency, support language development, and build the environmental awareness of our students.

CONTRIBUTORS

Katharine Isbell is assistant professor of comparative culture at Miyazaki International College, Japan, where her primary responsibilities are to develop and teach applied information science and English adjunct sections to university courses. Her research interest focuses on the use of computers in the language classroom.

Jonathon Reinhardt has taught ESOL in the United States, Austria, and Japan. Currently, he teaches applied information science and English adjunct courses at Miyazaki International College, in Japan. He is investigating research and design issues in developing Internet literacy skills and integrating Web-based technologies into EFL curricula.

CHAPTER 5

The LEO Lab: Student and Teacher Training

Karima Benremouga

INTRODUCTION

As technology becomes faster and more powerful, teachers and researchers are hoping to be able to take advantage of it and use it to promote language proficiency. This chapter describes the Applied English Center's Learning English On-line (LEO) Laboratory and demonstrates how computer-assisted language learning has been used effectively to instruct preuniversity ESL students and help new international students adjust to the University of Kansas, in Lawrence, Kansas. The information provided here is intended to help CALL practitioners whose institutions are planning to open a computer lab assess the possible outcomes of integrating computer-assisted language learning into the curriculum.

CONTEXT

The Applied English Center (AEC), founded more than 30 years ago, was set up to help international students develop language and study skills necessary for academic work at U.S. colleges and universities in general, and specifically at the University of Kansas. The AEC designed the program to assist students with English problems and help them make a successful transition to U.S. campus life. It is not a degree-seeking program, and admission to the AEC does not ensure admission to the University of Kansas. For full admission to the university, international students need to have a TOEFL score of 570 or above. Otherwise, students are required to take the AEC English Proficiency Test, a 4-hour battery designed to reveal students' knowledge of English grammar and their reading, writing, and listening skills. Depending on their scores, students are required to enroll in one to four remedial English courses at the AEC. The program offers six levels of instruction in the four skills: speaking, reading, writing, and listening.

In the summer of 1994, the AEC opened a new computer lab equipped with eight Macintosh Centris 610 computers—five of which had CD-ROM drives—a server, a laser printer, and a table where students can study while waiting to use a computer. The LEO lab was designed to provide AEC students the opportunity to become familiar with computers, learn how to use them for word processing, and improve their English skills.

Students come to the LEO lab with their classes to attend workshops, or in small groups or individually to work on their assignments, type papers, or just practice typing. Some students enjoy our small collection of word game software. Software of particular interest to our students has included

- TestMaster (1990; now in Wida's Authoring Suite (Jones & Trackman, 1999), a structured, authorable program that allows its users to explore a variety of answers, was particularly helpful to our students and was by far the most used software in the lab.
- Writer's Helper (1989), which calls students' attention to portions of their writing that need to be improved, and helps students organize their thoughts and writing.
- Oregon Trail (1991), a content simulation that encourages group interaction and decision-making.
- VersaText (1990), which is designed to help students increase their reading comprehension and speed, and comes with reading passages on a variety of topics, such as holidays, typical U.S. settings and activities, and controversial issues.

Other software included vocabulary games, such as Hangman (Winograd, 1993); instructional diskettes that came with the Macintosh computers; typing tutorials; additional content CD-ROMs and simulations; and reference works, such as the Grolier Multimedia Encyclopedia (1993).

Because a large number of students come to the AEC with little or no computer experience, the LEO staff, whose members place a high priority on training, have developed more than 15 workshops to teach students how to use the Macintosh computers with various language software programs and the Internet. In addition to familiarizing students with the resources available to them in the lab, these workshops serve to orient students to computer use gradually, in a nonthreatening environment. The remainder of this chapter will discuss these workshops and the necessary teacher training components.

DESCRIPTION

During the first weeks that the LEO lab was open, three workshops were offered:

- Introduction to the Macintosh Computer
- Introduction to the Lab (lab policy)
- Introduction to Microsoft Word

Students were required to complete the first two workshops in order to use the lab. Other workshops to train students in the software available at the lab also were offered. LEO staff scheduled these hands-on practice sessions according to class level. For instance, Level 1 came to the workshops with their teachers, whereas Level 5 students signed up individually for classes. The following list gives examples of available workshops:

- Introduction to the Macintosh Computer and LEO Workshops for Level 1 students.
  Speaking/understanding classes take these workshops in Week 5.

- Introduction to the Mac and LEO Workshops for Level 2 students. Whole classes take these workshops in Week 3.
- Introduction to the Mac and LEO Workshops for students in Levels 3–5. During the second and third weeks of the semester, the lab staff offers many workshops for more advanced students. Alternatively, students who know how to use the Macintosh sign up for a 5-minute test consisting of a list of commands that students have to perform, such as opening and copying a document, closing windows, deleting documents, and ejecting a diskette.

Once the LEO lab was fully operational, the center's program schedule was changed from 5 hours in classes to 4 hours in class and 1 hour in the lab, where students complete assignments. The teachers chose what day of the week should be spent in the lab. Assignment due dates were coordinated with the lab staff and posted on the lab bulletin board so that staff members knew what students were working on which assignment. To accommodate the fifth-day change, we made the following decisions, which became the basis of lab policy:

- The lab should be open more hours.
- The lab staff cannot give individual make-up workshops for students who skip training.
- Classes can be trained during software workshops without their teachers being present, in which case the LEO staff provides students with Proof of Attendance slips to show their teachers.
- Teachers are responsible for keeping track of who still needs a workshop. Students who have not attended both the Macintosh and the LEO workshops are not allowed in the lab. We also recommended that teachers assign the workshops as homework and give credit for attendance.
- Except for software training, the lab staff cannot be responsible for whole classes without the teacher present. That is, the lab staff cannot baby-sit a class. If a teacher reserves the lab for a class of students, the teacher needs to come to the lab and teach the class that day. The lab assistants help with computer-related questions.
- Mondays and Tuesdays are generally reserved for training, although teachers can reserve the lab on other days if there is no conflict with training sessions. Teachers need to fill out a lab reservation request 2 days before they want to use the lab.
- The lab is very busy, so teachers should be careful to ensure that students are given enough time to complete the lab assignments.
- Because students are not allowed to use the lab until they have completed the two basic workshops, teachers should not start weekly assignments using the lab until the fourth week of classes.

After the first half of the semester, when the lab is busy with training workshops, it is open about 50 hours a week, generally 8 a.m.–5 p.m., plus 7–9 p.m. three nights a week, and 9 a.m.–noon on Saturdays. Except for CD-ROMs, most of our software programs are also accessible from servers in other computer labs, and students are given instructions on how to access the LEO server from these remote sites. Students also are provided with handouts on how to use a particular software, for example, "How to Use the Grolier Encyclopedia" (see Figure 1) and "How to Access E-Mail." Directions specific to your own lab can be developed with the help of your lab technician.

After using the lab for 7 weeks, the students were asked to fill out questionnaires, which included a checklist describing feelings that they might have had about using computers (e.g., nervous, comfortable, I enjoy using them, I am not interested in them) In addition, nine low intermediate-level students wrote an essay, assigned by their teacher, about the lab. Generally, students seemed to be excited about the LEO lab. We asked two simple questions to measure their attitudes toward computers before and after they used the lab (see Table 1).

The changes in attitude seemed significant. Based on the checklists, and the essays, which were collected separately, it was clear that the majority of students thought that computers were enjoyable and that learning English through them was even more enjoyable. A few students said they had not liked computers before the summer term began, but that they did like them after using the LEO lab. Despite the many positive responses, one student wrote that given the fact that both computers and English were difficult, it would be less time-consuming to learn English through other means, such as reading books or watching movies.

1. Insert the disk in the CD-ROM drive.
2. After the icon appears on the desktop, open the hard drive and double click the Grolier Encyclopedia folder. Then open the New Multimedia Encyclopedia.
3. When you see the Welcome screen, click in the close box to stop the animation and bring you to the Main Menu screen.
4. At this point, you can select any feature you want; or to know more on how to use the encyclopedia, you can select Help.
5. If you want to select Title List, for example, click on it once.
6. In the Title Index, type the subject you want to search, then click Go To or press Return.
7. You are now taken to the article. Use the scrollbars to move around in the article.
8. On top of the window one or more icons appear. These may be the outline icon, animation icon, picture icon, sound icon, Fact Box, and/or Multimedia Map icon.
9. Click, for instance, the Picture icon in the article icon bar. If there is more than one picture available, you will be provided with a list from which to choose. Click Caption at the bottom of the picture to see the caption, and click the Sound icon to play the sound associated with the picture.
10. When you are done, click on the Close box; that will take you back to the Title Index. If you keep on clicking the Close boxes, you will end up back at the Main Menu.

REMEMBER that to go back where you were, all you need to do is click the Close box.

FIGURE 1. How to Use the Grolier Encyclopedia on CD-ROM

TABLE 1. SAMPLE CHECKLIST RESPONSES: STUDENT ATTITUDES

Question	*Favorable*	*Negative*	*Total*
1. Before this summer, how did you feel about computers?	71	34	105
2. Now, how do you feel about computers?	92	16	108

DISTINGUISHING FEATURES

Students tend to learn more if they are interested in what they are being taught. In addition, students learn more if they can take control of the learning process. We found at the AEC that training teachers to use the computer lab was a crucial element in helping students take control of their learning in the lab. Students from classes where teachers are not enthusiastic about technology rarely come to the lab. Thus, a consistent program of teacher education was followed throughout each semester and became the key to lab success. We trained teachers individually in the lab; we trained them in their offices; and we organized workshops.

Teachers must know the LEO requirements for the courses they are teaching before the semester starts. Usually, the LEO lab director explains the procedures during orientation week, covering

- which software students will use
- when students will be trained on it
- how often students will use it
- how, if at all, teachers will monitor or assess computer assignments

This initial instruction allows teachers to communicate the requirements clearly to students when they go over their course policy sheets (see Figure 2). Teachers at Levels 3, 4, and 5 are required to include a statement about the computer component in their course policy sheets (see Figure 2).

Teachers also are required to know the software and how it fits into their respective courses. The LEO staff organizes training sessions for the teachers to help them integrate computer work into their coursework. It was made clear to teachers that if the lab work were going to have any educational benefit, they needed to take

Required Computer Workshops

The two required 1-hour workshops for students new to AEC Levels 3–5 are

January 17–20	Introduction to the Macintosh
January 23–27	Introduction to LEO (the computer lab)

You can sign up for these at the AEC Computer Lab, 226 Fraser. Please sign up now! The workshops will be held in 226 Fraser. If you are new to the AEC and already know how to use a Macintosh computer, you **must** go to the computer lab January 17–20 and demonstrate your proficiency in order to be excused from the first workshop.

FIGURE 2. Sample Statement on Computer Workshop Requirements

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an active role in promoting it. To do this well, teachers had to have studied the software program enough to know the purpose of the application, what students gain by using it, and how long it takes to complete an assignment. Once teachers were thoroughly familiar with a piece of software, they were able to create worksheets to help students, as, for example, the worksheet to help a student perform a search in the Grolier Multimedia Encyclopedia (1993; see Figure 3).

AEC faculty and LEO staff met repeatedly to create worksheets for classes. The worksheets were accompanied by instructions for the staff as well (see Figure 4).

Another important element in teacher training was the use of e-mail. Students are required to write e-mail to the teachers and their classmates, and to subscribe to one or more of the on-line student discussion lists. Using e-mail to communicate with classmates and other ESL students from all over the world stimulates and motivates these college and university students as they learn English and provides a forum for cross-cultural discussion. To assist in getting started, handouts listing the specific steps for accessing the e-mail system at the AEC were prepared.

Grolier Encyclopedia Worksheet

Search Worksheet (to be done in a computer lab with the teacher):

1. Write your topic (a general word or phrase): ____________________
2. Do a search for your topic.
    How many articles did you find for your topic? __________
    Is it too broad (more than about 30 articles)? __________
    Is it too narrow (fewer than about 10 articles)? __________
    Is it just right (between 10 and 30 articles)? __________
3. Write your topic again in the form of a research question:
    ____?
4. Circle the key words in your research question.
5. Do another search for the key words combined.
    Is it too broad?
    Is it too narrow?
    Is it just right?
6. Revise the search if necessary by changing the key words. If the search is too broad, look through the list of articles to find other words you could use to narrow the search. If the search is too narrow, delete one of the key words from the search.
7. Keep notes on related terms in the Title List during your searches. You might want to use them when you revise your search or when you are looking for support of your thesis.

Notes:

FIGURE 3. Sample Worksheet

Directions for Teachers

Examples of general topics:

- technology
- architecture
- weather

Examples of research questions:

- How has the use of satellites changed television technology?
- How has art influenced architecture?
- How does weather affect agriculture?

Teachers, make sure you tell the students the following:

1. It is illegal to copy information from any source into your papers, including electronic encyclopedias. Therefore keep a pen and paper nearby so you can take notes. When you take notes, DO NOT COPY! Write down the most important points. It is better if you write phrases, not complete sentences. This will help you to create your own sentences later.
2. If you are looking for support for a paper, use the statistics in the Fact Boxes. Statistics can be powerful proof if used correctly.
3. If you do not find the information you need, try other key words.
4. Have fun and learn a lot!

The following assignment is just a sample exercise that you can give your students to do on their own. The instructions are for the Macintosh version. [Note: These steps might not apply to the latest version of the encyclopedia.]

Grolier Encyclopedia Assignment

Musical Instruments:

1. Check out the Grolier Encyclopedia CD from the lab assistant.
2. Put the CD in the machine and double-click on the icon to open it.
3. Click once on Pictures.
4. Click once of Fine Arts.
5. Click once on Music.
6. Click once on Musical Instruments. Then click on the + in the upper right-hand corner.
7. Double-click on Banjo. Then click once on the headphone to hear the sound the banjo makes. Write the word banjo under the appropriate column in the chart below. [Note: Students fill in a worksheet from context.]
8. Click the close box for the Banjo window.
9. Repeat Steps 7, 8 and 9 for the instruments listed below.
10. Click in the close box for the Picture Index window.

FIGURE 4. Sample Instructions for Teachers

PRACTICAL IDEAS

Create Detailed Handouts

Handouts on the operation of hardware and software, as well as worksheets for use with software applications help make a lab more accessible to students. The more teachers are involved in the process of creating these handouts, the more enthusiastic and involved they are apt to be in the use of technology. A lab that is easy to use will be full most of the time.

Encourage Collaboration

Collaboration among teachers and with the lab staff is an important element in lab success. The LEO staff, comprising two codirectors and six graduate teaching assistants, worked as a team to ensure success. Frequent workshops familiarized teachers with software and gave them an opportunity to explore new possibilities in using computers for instruction.

Develop and Schedule Workshops

Student workshops early in the semester and clear handouts for software use make the lab easy to use.

Establish Clear Guidelines for Lab Administration

Carefully elaborated rules and regulations are needed to keep a lab running smoothly. A list of rules and regulations enforced in the LEO lab is found in Figure 5.

Assign Electronic Discussion Forums

Electronic discussion forums, such as the *SL-Lists* (Holliday & Robb, 1998), are a valuable part of language learning. Teachers may assign students to subscribe to a specific discussion list and report to the class what other students and teachers think of a specific subject. Teachers may also require that students participate in the on-line discussions by expressing their opinion to everyone on the list. Students can post questions on topics of interest, pile up all the answers, and then write a synopsis to present to their class. Teachers can subscribe to electronic lists, too, and these may become a significant part of their own training.

Provide Assistance When Needed

Assisting students just when they need it makes a difference in how they perceive computers and computer-assisted instruction. Most students who obtain help as they are learning how to use a computer recall an "exciting" and "happy" experience. Similarly, those who do not have help recall a "frustrating" and "terrible" experience. One of the main goals of the LEO Lab was to teach students how to be independent while making sure help was available to them when needed. The lab assistants were instructed to advise the students to read the instructions on how to use specific software before asking them for further help. The lab assistants would even read the instructions aloud to the students before offering any kind of help. This balance between aiding students and encouraging them to use the resources independently is an important aspect of successful lab operation.

- The lab is restricted to AEC students only.
- If the lab is full, students working on their classroom homework have priority.
- If the lab is full, the lab assistant on duty keeps a waiting list.
- If the lab is full, the 1-hour time limit is enforced.
- If the lab is full, AEC staff/faculty are also required to use the waiting list.
- Teachers can reserve the lab at least 2 days before they plan to bring their classes.
- Lab assistants can use a workstation if no students are waiting.
- Level 3–6 students are required to take the *Intro to LEO* and *Intro to Mac* workshops before they can use the lab during open hours.
- Students who pass the Mac Test are not required to take the Intro to Mac workshop.
- The introductory workshops are offered during the first few weeks of the semester.
- A folder is kept for every student.
- Students must check in by requesting their folder.
- Students must fill in the record sheet inside the folder: date, name, class, and software to be used.
- When students leave the lab, they put their folders in a basket.
- The lab assistants count the folders and return them to the file.
- Students are not allowed to print nonclass materials.
- Every printout has to have the student's name, the teacher's name, and the class number.
- The lab assistants check the printouts and put them in the Output basket.
- Students sign the printing log before they are allowed to retrieve their printout.
- Dictionaries, CD-ROMs, and textbooks can be checked out for use in the lab.

FIGURE 5. Lab Rules and Regulations

CONCLUSION

Even though computers cannot be used as an alternative to classroom teachers, the LEO Lab offers students more than the conventional English class. CALL presents ESL students with immediate feedback, a task an English teacher could not possibly perform with every single student in a class of 15 or more. Individualized learning is another positive aspect associated with the LEO Lab. English through computers allows for self-pacing, and the one-to-one nature of CALL makes it possible to monitor student understanding and respond to the needs of each individual student.

At the LEO Lab, computer-assisted language learning has affected ESL learners' attitudes toward English study. Even when not motivated by English classes, students improve their English writing through their daily use of e-mail. With few exceptions, students find computer use appealing and motivating.

ACKNOWLEDGMENTS

This chapter is based on my experience at the Applied English Center, one of the happiest and most fortunate times in my professional career. I owe thanks to the LEO staff, who produced the sample handouts used in revised form in this chapter.

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CHAPTER 6

Getting "Real" With Video and CD-ROM: Real English at the Marzio School

Michael Marzio

INTRODUCTION

Although language training in the French education system has improved steadily over the past 20 years, the majority of adult students still arrive in continuing education language centers like the Marzio School with more theoretical knowledge than practical experience in speaking and listening. When they come back from their first trip abroad, or immediately after receiving foreign visitors at their factories, all the students report to their teachers the same reactions. They invariably say, "I can understand my English tapes and CD-ROMs, and of course I can understand my teacher, but I couldn't understand those Londoners [New Yorkers, Texans, Scots, Dubliners] when I arrived." As the years went by, the teachers were never surprised to hear this, but it made them feel as if they were doing something wrong.

The students who had traveled were also clear about another point. In most cases, when the subject centered on specific work-related issues, communication was not necessarily easy, but it was always possible to get the message across. This was especially true for the engineers and technicians. The most severe difficulties were encountered when the conversation became "conversational." Restaurant meals were often excruciatingly tedious. It was much easier to talk about butterfly valves than butterflies, much easier to explain the advantages of one's superior wetting agent than to talk about the weather.

Why is this? Why are the social banalities so much more difficult than the seemingly complicated technical, administrative, or business topics? One reason is probably that relaxed conversation lends itself to imprecision. If one tends to mumble, one is more likely to mumble when the well-organized business presentation is finished, not during it. And when two engineers or businesspeople from different countries share the same specialty—which is often the case during technical exchanges and negotiations—the key vocabulary is often English technical jargon that the nonnative-English speaker knows just as well as a native-English-speaking colleague. But when you take the two technicians out of the only context they share, conversation about the weather and even the commonplace variations on *How are you?* can become insurmountable.

This is why a team at the Marzio School decided to integrate "real" English into the learning experience from ground zero. Our intention was that French students would hear not only *How do you do?*—the formula that the *professeur d'anglais* taught years ago in the lycée—but also, *How are you?* with several different national accents, and the commonplace American, *How ya doin'?* (*How are you doing?*), which might make his *professeur d'anglais* turn over in his grave, but will certainly help students avoid language shock when they arrive on U.S. soil. The result of the team's efforts are a video series and a set of CD-ROMs with complementary interactive practice exercises, and a print workbook, all available for purchase from the Marzio School. This chapter describes the process of designing and creating the multimedia courseware and offers practical insights for teacher educators interested in this process.

CONTEXT

The Real English approach was born out of the needs of a private language school. The typical student in the case at hand is a working adult, most often a technician, engineer, businessperson, personal assistant, secretary, or receptionist. His level can range from true beginner to advanced. The most common level encountered is low intermediate. Language schools like the Marzio School possess some of the ideal conditions for language learning. The students are highly motivated because they need an additional language to succeed in their professional lives, and the classes are small—an average of fewer than three students per class.

However, the Marzio School needed to inject authentic English into its classrooms for the reasons noted above. The seed of the Real English approach goes back to several ESL videos I made in the 1980s, before the advent of CD-ROM technology. These videos included actors in comical business situations in *We Mean Business* (Marzio, Johnson & McBride, 1985) and a series of Monty Python-type sketches, *The Adventures of Charlie McBride* (Marzio, Johnson & McBride, 1980), organized by grammatical structure. In these videos, the actors were good. They were natural. But they were not spontaneous. A good actor can appear spontaneous, but he cannot be spontaneous. This nuance is at the basis of the Real English materials we produced.

Spontaneity, after all, is what the student is going to have to deal with when he leaves the classroom. If spontaneity can be captured on tape and in digital video, and if that spontaneity can be made manageable by breaking it down into discrete learnable units (which are represented as grammatical structures in most textbooks), then the spontaneity can be used for learning. It is as close as learning material can get to the reality of speech.

Our objective was to bring authentic oral material for beginners to the classroom. But authentic listening materials, such as news broadcasts, or movies, are usually much too difficult for beginning and intermediate students. The Marzio School taught English to many beginners and false beginners, so the school had a real need for authentic materials at a beginner level. Also, many of the teachers had been living in France for more than a decade and were beginning to lose their American/British/Australian/Scottish/Irish accents. Some were beginning to speak with exaggerated clarity and precision. (The French call this phenomenon *professional deformation.*) The teachers realized the problems these transformations posed to creating authentic listening materials with local resources.

As a result of these factors, the teachers became producers. They wanted real English, the kind their own students heard in the streets when they went abroad, and the teachers knew that they themselves were often not the best source of this type of English. At the same time, the authentic input had to be broken down into discrete grammatical units, just like most of the books they used. Otherwise, the real English would be used exclusively with advanced students—only 10% of the ESL student population at the school.

◈ DESCRIPTION

Real English Interactive CD (Marzio & Rivot, 1999) is basically a video and CD-ROM collection that has organized bits of spontaneous interviews with a large number of people whom the development team met in several English-speaking countries. We simply approached passersby on the street, explained that we wanted to bring real English back to our ESL classrooms in France, requested clearance for commercial purposes, and started asking simple but very specific questions while the camera rolled. Roughly 850 people were interviewed. The average interview time per person, couple, or group was 8 minutes. We collected rushes totaling 120 hours, only 2 hours of which have finally found their way into the videotapes and CD-ROMs. The database of the 850 interviewees represents 90,000 lines of speech.

The videotapes were made first, and the CD-ROMs were a natural extension of the videos. Students who had traveled briefly to the United States wanted to hear the simple (but difficult) exchange, *How ya doin'? OK, how YOU doin'?* for example, over and over again until they felt natural repeating it. Such activities lend themselves to digital media. It is tedious to play and rewind a videotape to hear the same passage 25 times, but it is easy to replay repeatedly with digital video on CD-ROM. More importantly, the creators wanted to take all the ideas outlined in the Real English Video Workbooks and improve on them while making them interactive for the students who wanted to work on their own computers at home. Besides, it seemed obvious that other schools and other individuals had similar needs, and so eventually we could recoup some of our production expenses through sales. Finally, a colleague who was also a computer programmer had just finished developing most of the exercise templates required to do the job, and had applied for a license for speech recognition technology, which would allow the computer to recognize correctly spoken words and phrases during oral activities. User-friendliness and an artistic touch were further desirable elements in creating a unique interactive program.

There are no actors or actresses in Real English. The interviewers hoped that native speakers would respond in ways that would be usable in their English courses. This is why so many people were interviewed and so few were chosen to be included in the final edits. A list of the criteria used in the Real English editing room appears in Figure 1.

Back in the editing studio, paradoxically, few interviewees met all the positive criteria. If equal time had been given to all the mumblers of the world and to certain people with impenetrable regional accents, rather than to those who speak relatively clearly and normally, Real English would not have been understandable to the teachers, let alone to the students.

The third criterion (whether or not the answer to the question is direct), did in fact make it impossible to use some extremely interesting, but often quite complicated responses to the simple questions. This is another example of why Real English is not as real as it pretends to be. Often, in an authentic conversation, speakers reply

Reasons to use an interviewee in Real English	***Reasons not to use an interviewee in Real English***
Speaks relatively clearly, normally, and naturally.	Mumbles to the extreme or, Speaks too slowly, as if he/she wanted to be sure an ESL learner would understand.
Speaks English with a regional/national accent, but the interviewer, who comes from a different English-speaking country or region, has no trouble understanding.	Regional/national accent is very heavy. Neither the British interviewer nor the American cameraman can understand the speaker.
Gives a direct answer that illustrates the target structure. Example: Interviewer: "Do you like your job?" Interviewee: "I do. I love it"	Gives an indirect answer. Example: Interviewer: "Do you like your job?" Interviewee: "Wouldn't think of doing anything else. Couldn't find a better job than this if I tried."
Smiles, or otherwise seems cheerful or positive. (As Taylor [1998], wrote in the first review of Real English Video: "Not an unhappy soul in the place" [p. 3].)	Does not smile, or seems indifferent.

FIGURE 1. Criteria for Editing Real English

in unexpected and quite subtle ways. On the other hand, before the project is finished, we hope to create a final CD-ROM with all the most interesting responses—without filtering them through the usual grammatical limitations—as a challenge for advanced students.

The last criterion is important only because the good humor of both interviewer and interviewee makes the whole approach engaging. Even teachers, or other people who are not learning English, enjoy watching the video segments. Another positive element is the original music in the video, written by a duo of many talents, Roger Godfrey and Charlie McBride. They created the music after watching the preliminary edits; their inspiration for the music was the questions and the way the interviewees answered.

Creating Content

In order to decide what questions to ask in the streets, an ad hoc committee of Marzio School teachers created a wish list of structures they wanted illustrated. All the teachers agreed that there was no point in trying to re-create the wheel already in evidence in textbooks. They all simply wanted the wheel to turn a bit better. Their efforts reflected a wish to continue using the types of books and tapes from the major ESL publishers they had always used, especially those based in the United Kingdom (who have always seemed to have hegemony in this field) while also recognizing the reality of pronunciation and speaking styles in other English-speaking places and taking into account the possibilities of using our own new authentic material.

There was general agreement, for example, that the first videotape (in a series of three), and the first two CD-ROMs (in a series of eight) should be concerned only with the verb *to be* in the present (is and *are* with adjectives, basically), because of the inexhaustible uses of this simple structure, and also because the functions it calls upon are so rich. All the different books that the teachers had been using—the most recent ones and classics, those based on general English and those based on business English for beginners—seemed to go along with this grammatical assumption to varying degrees.

However, the interview situation does not necessarily lend itself to all types of structures. Case in point: How do you ask a question so as to elicit *there is* and *there are* without sounding artificial? The committee never found an answer to this question, so consequently these are among the missing structures. On the other hand, examples for the majority of the usually taught grammatical structures were found. Some questions were abandoned after a few days of trial and error in the streets. The ones that worked the best are now the titles of the lessons in the first Real English videotape. The first two CD-ROMs are a bit different from the videos because much of the videotaping in the streets was done after the first videotapes were completed. Sometimes the lesson content is the same in both media (i.e., same question and same types of answers), but with different interviewees being featured for the answers. The questions that seemed to elicit the most usable responses are listed in Figure 2 as they appear in the two media.

The same questions are answered by businessmen in the city of London, teenagers from Texas on holiday in New York, Irish-American policemen in Atlanta, traffic wardens in Dublin, retired Scots in Edinburgh, civil servants in London, hot dog vendors in San Francisco. The varieties of cultures, accents, walks of life, and their different combinations, seem to be endless.

Where basic beginner items, such as the use of *a*, *an*, *the*, or possessive adjectives, for example, are not addressed directly in the interviews, the workbooks for the videotapes or the interactive exercises on the CD-ROMs provide the practice required. For example, the workbook for Videocassette 1 includes

- practice of greetings
- possessive adjectives
- polite requests
- addresses and telephone numbers
- possessive pronouns
- uses of *who*, *which*, *how many*, and *how much*
- object pronouns
- prepositions
- *whose*
- *there is/there are*

The level of Video 1 content corresponds to that which is usually described as *beginner* and *low intermediate*. The interactive content on the CD-ROM is described in more detail below.

Video Cassette 1	***CD-ROM 1 & 2***
1. *Hi. How are you?* The essential social banalities	1. *Hi* and *How are you?*
2. *What's your name?*	2. *Hi, How are you?* and *What's your name?*
3. *How do you spell it (your name)?* The ABCs	3. The alphabet in 4 Anglo-Saxon countries
4. *Where are you from?*	4. *Where are you from?* and *What's your nationality?*
[Lesson 3 above]	5. *What's your name? How do you spell it?*
—	6. Review of lessons 1 to 6
5. *How old are you?* Numbers	7. Numbers—number chart *How old are you?* Telephone numbers, and license plate numbers
[Lesson 11 below]	8. *What time is it?*
6. *Are you married?*	9. The Jones family (*to be* + adjectives)
7. *What's your job?*	10. *What's your job?*
8. *"Liberty Street"* (a song by Roger Godfrey and Charlie McBride, a visual celebration of New York City) Verb structures limited to is and *are*	—
9. *What's your favorite color?*	—
10. *This is...* Presenting people	—
11. *What time is it?*	[Lesson 8 above]
12. *What's the weather like?*	11. *What's the weather like?*
13. *What's your astrological sign?* *What are (Pisces) like?*	—
14. Five Nationalities: *What are the Germans/Italians/French/Americans/British like?* Adjectives with *be* forms	[CD 3]
15. *Bye, Good-bye, Cheerio, etc*	—
—	12. Directions: *Can you tell me the way to...?*

FIGURE 2. Comparison of Video and CD-ROM Content Areas and Sequence

The questions that worked for Videocassette 2 cover

- present continuous
- *can*
- directions
- *have got* and *have*
- present simple (*do/does*)

The structures in this videocassette are usually described as *intermediate*, whereas the interviews for Videocassette 3 take us through

- uses of *like to do* and *like doing*
- *going to do*
- simple past with *did*; *was/were*, and *ago*
- *used to do*
- comparatives and superlatives
- present perfect with and without *for* and *since*
- conditionals

The structures in this videotape are usually described as *intermediate*, and *high intermediate*. Organization of the lessons in the CD-ROMs (and in a single DVD disc to be produced later in 2000), is a bit different, but is intended to complement the video content with greater interactivity.

The CD-ROM Activities and Organization

Figure 3 shows the main menu for Real English CD-ROM 2, Lessons 7–12. The user has just clicked to open the menu for Lesson 10, and as you can see, Charlie is highlighted, meaning the user has chosen to go back to see the video of Charlie. The Lesson 10 menu gives an overview of the organization of all the lessons in Real English on CD-ROM. Although certain types of exercises are used in some lessons and not in others, and although Lesson 10 is a bit shorter than most, it provides a very representative view of the whole.

At the top we see Presentation, the first step in what is intended to be a linear sequence. The user simply clicks on Presentation, and watches the complete video, in this case all 13 interviewees one after the next answering the same question: "What is your job?" At this point the user does not necessarily understand a great deal. The illustrations however, provide visual clues: A policeman dressed in uniform answers, "I'm a police officer"; a woman replies, "I'm a housewife," as a drawing of a housewife at home vacuuming the carpets, with a young child to take care of, appears. The beginner may have no idea of how *housewife* is spelled at this point, and perhaps is not sure of how the term is pronounced either. This is normal.

Before continuing our description of the program sequence, it should be noted that natural review is used whenever it is part of the flow of an interview. For example, in Lesson 10, "What's your job?" we hear:

Interviewer: Hello. What's your name? [Review from Lesson 2]
Interviewee: Hi. I'm Myra.

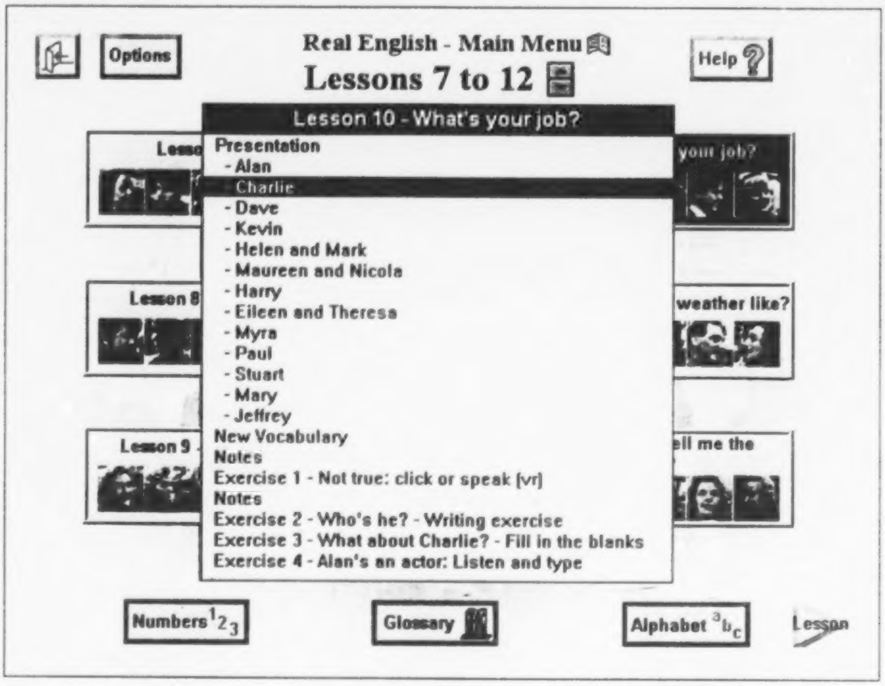

FIGURE 3. Menu for Lesson 10, in Real English, CD 1 (1999). Reproduced by permission of Michael Marzio.

Interviewer: Myra! Hello, Myra. What's your job? [new target material]

Interviewee: I'm a store manager.

Once the presentation is over, the next step is the same in all parts of the software: The instructions tell the user to click the Forward arrow on the bottom right of the screen whenever he is finished with an activity. Linearity of progression is encouraged. The approach is like that of a course: First there is a presentation phase of initial watching and listening; then there is repetition.

An example of the repetition phase is illustrated by the listen/record/compare screen (see Figure 4). On the far right is a series of four buttons, from top to bottom:

1. The Speaker icon permits the student to repeat the last phrase that was heard.
2. The Record/Red Lips icon, which looks like lips only when the button is pressed down, signals that the user should be speaking (repeating the phrase just listened to).
3. Compare, the balance or scales icon, to be pressed after recording one's voice, provides a comparison with the interviewee who spoke.
4. The Text button: By clicking on it after recording, the user can see the text (which appears at the top, under the instructions).

Concerning the other features of the lesson menu as seen in Figure 4, we note:

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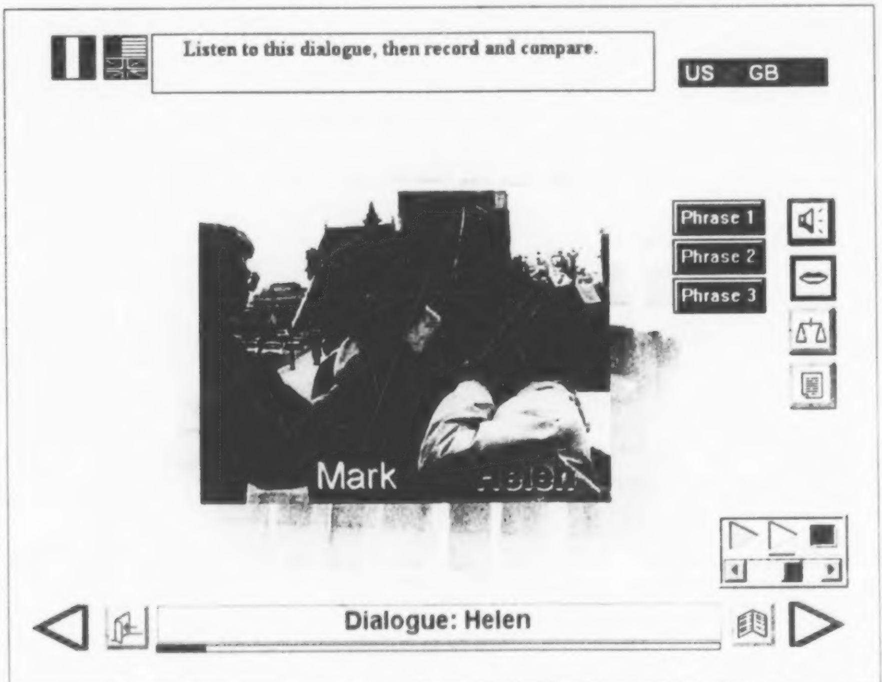
1. The French flag in the upper left (this would have been a German flag had the user chosen German upon installation, Spanish if he had chosen Spanish). Clicking on this flag provides a translation of the instruction into one's native tongue.
2. The U.S. and British flag icon is right next to the French Flag. When the user clicks on it, he hears and can read the instructions in English.
3. At the top right, there is an indication of the nationality/accent of the interviewer and the interviewee.
4. The arrows on the extreme bottom right and left are previous page/next page buttons. The user can continue or go back as desired.
5. The Open Book icon at the bottom right brings us to the main menu.
6. The Exit button on the bottom left lets us quit the program.

Let's return to the Lesson 10 menu (Figure 3). Below Presentation (Jeffrey is the subject of the last video in the sequence), we arrive at the New Vocabulary section. In this section, the learner clicks on the words for which he wants a translation, and hears the word in the original context where it was first heard. The Record and Compare functions remain available for additional practice.

The last activity before the exercises begin is the bilingual Notes. About half of these notes are purely grammatical; half are purely cultural. Here again, we allowed ourselves to be guided by the spontaneous content. This lesson is the first time we



Listen to this dialogue, then record and compare.

FIGURE 4. The Repetition Phase With Record and Compare Controls (right side), in Real English, CD 1 (Marzio & Rivot, 1999). Reproduced by permission of Michael Marzio.

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have interviewees in the same lesson contrasting the article *a* before nouns beginning with a consonant, and *an* before a noun beginning with a vowel. This is obviously the moment to make a point of this difference.

The learner clicks forward from the Notes screen (or from the Menu), to begin the exercises. The first exercise is always multiple choice: Half of the lessons require the user to find the sentence that is correct, and the other half to find the answer that is not correct. By varying the nature of the exercise, we ensure that reading skills are sharpened. Note that this exercise can be done either by clicking on the correct answer or through speech recognition, where the computer "hears" the spoken answer and judges its correctness. This design allows users to do all the exercises whether their computers are sufficiently new and powerful to handle speech recognition or not.

If the learner is wrong twice in a row, the closed-caption version of the video is automatically played. After answering correctly, the Closed-caption button is also enabled, allowing the user to see the text of what he has been listening to. But it is enabled only after forcing the learner to listen. We followed the principle of "listen many times before reading the corresponding text" in order to provide the user with better listening habits and better pronunciation.

The next exercise, called "Who's he?" provides writing (keyboarding) practice. "Who's he?" is always a third-person exercise in order to offset the first-person emphasis of the interview situation. Now the program and the learner are asked to speak about the interviewees, not to them. The title of the exercise in the bar at the bottom of the screen provides a constant reminder that *who* will appear in every question. This type of exercise reinforces manipulation of the verb in the plural and the singular according to each picture, as well as practice of *he*, *she*, and *they*, also according to each picture on the screen.

The next exercise, a drag and drop called "What about Charlie?" practices sentence order. Students use the mouse to drag words into place. It is the most gamelike of the exercises we have implemented, providing a change of pace within each lesson. Although the user hears the original conversations in the first person, the exercise is in the third person.

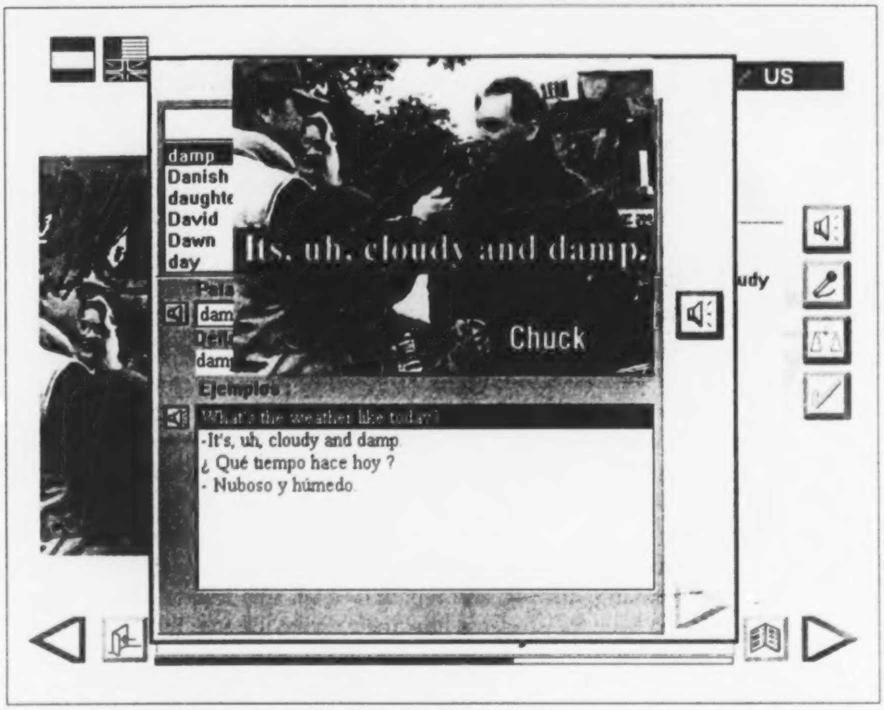
The fourth and final exercise in this lesson is a fill-in-the-blanks typing exercise, concentrating on tag answers and comprehension of the CD-ROM videos.

The bilingual dictionary is available at all times using a keyboard shortcut (Control-D as in *dictionary*), or by clicking on the Main Menu button, then on the Glossary button. The glossary can be accessed at all times from any point within the application. If the user gets there by clicking, he need only click on the large arrows at the bottom of the screen to arrive back exactly where he was before consulting the glossary (see Figure 5).

Videos Versus CD-ROM

What is the difference between the videotapes and the CD-ROMs? The obvious differences:

- The videotapes are linear, designed for classroom use on a standard TV monitor, and are therefore a bit clumsy to use, as are all ESL videotapes, which usually have to be rewound several times and replayed to provide the necessary repetition for the students. The CD-ROMs, in contrast, can



Its, uh, cloudy and damp.

What's the weather like today?

-It's, uh, cloudy and damp

¿ Qué tiempo hace hoy ?

- Nuboso y húmedo

FIGURE 5. Real English, CD 1, Glossary. The window opens over the presentation screen with examples in context and translation (Marzio & Rivot, 1999). Reproduced by permission of Michael Marzio.

be tracked to the right spot at the click of a button. A slider also allows the user to find any point within a video very quickly.

- The interactive world represented by the Real English CD-ROMs provides a level of learning comfort and a variety of activities that are unattainable with videotape and workbooks. The learner has constant access to a presentation phase, a listen/repeat/compare phase, eight different types of exercises, including mainstays like multiple choice, odd man out, and keyboard entry. Other exercises depend on the ability to understand the spoken word before typing an answer, and before seeing the corresponding text. Speech recognition exercises also are used, providing the learner with a rough gauge of his comprehensibility.

In other words, four skills are put to practice in the CD-ROM: listening comprehension, reading, speaking, and keyboarding; only listening is available directly from the videotapes, where much depends on the teachers, their use of the workbook, or their own exercises. In the CD-ROMs, the learner can review and rehearse as much as needed, and the hyperlinked notes provide assistance in the native language. Other differences worth mentioning follow.

- The learner works at his own pace with the CD-ROM. This is important because not many beginners (or intermediates for that matter) understand very much the first time they watch and listen to the people in any one lesson. But the user can conclude a lesson with complete understanding of everything that has been said, thanks to the step-by-step presentation and the on-line bilingual glossary containing every word spoken or written in the CD-ROM.

- The users are also motivated to follow the presentation closely because they can identify with the interviewees. They hear the occasional missteps and false starts and self-corrections that they would encounter in native speech. They experience the spontaneity. Things get personal.
- Learners can choose their own language, upon installation, for the Help files and application interface. Obviously, these would not be accessible to a beginner if they were in English. At present, the user can choose French, Spanish, or German. Future versions will include Italian and Portuguese, and if possible, Japanese and Mandarin as well. The other elements that use the student's native language are the bilingual glossary, the text of the instructions for each exercise, and the bilingual grammar notes. These features ensure that the many things that seem impenetrable to learners when they begin a lesson all become clear as they continue listening, speaking, reading, and typing. We felt that it would be counterproductive to have the students hear their native tongue. But the ability to read the translation of a word or the explanation of a cultural difference often means the difference between total understanding and total frustration.

The digital videos on the CD-ROMs present one disadvantage: The size of the video window is much smaller than on a regular TV screen. All of the video has been compressed to 320 × 240 pixels, which, in 1999, is average for Video for Windows files (AVI) or QuickTime movies. The compression has been carried out at high data rates, however, to preserve the high quality of the original rushes. This is one reason the installation requirements include 120 MHz processing speed as a minimum. The compromise between most comfortable viewing pleasure versus the required space for the interactive environment (e.g., screen real estate for buttons, icons, exercise texts) means that there is no full-screen video in the interactive version of Real English.

DISTINGUISHING FEATURES

One important feature of Real English is its spontaneity, which involves and, consequently, motivates students. Learners feel an emotional bond with the world whose language they are learning. They have got an inside track. Even native speakers of English watch Real English from beginning to end.

Secondly, the videos represent an approach that begins with engaging content instead of learning theories. The aspects that are strictly pedagogical flow from the content, not the other way around. The linear aspect of the videos might be a disadvantage in some ways, but the linear progression in all the lessons on the CD-ROMs ensures comprehension of what initially seems very difficult to the beginner. The sequence of target items is coherent and is clearly laid out.

The other aspects that make Real English a pleasure to use and an effective learning tool are found in other programs, and the authors do not pretend to be innovative in every realm. There is nothing original in dragging and dropping words to make sentences, or in typing to fill in blanks, or in speaking into a microphone to see if a speech recognition application is going to understand one's voice. We have tried, however, to design such exercises so that they are always in a context, always related to the presentation that the learner has just watched. We also tried to ensure that exercises were designed so that the user never has any doubts about what is expected.

Another distinctive feature of Real English is the concept of compensating media. Videotapes and CD-ROMs present a double cutting edge. One is a bit old-fashioned, but is still a godsend for teachers: The videotapes bring authentic English from the real world to a group in a classroom. The teacher facilitates understanding; he or she brings flesh and blood and laughter to grammar structures and functions that seemed dead, or limp at best. The video workbook provides lots of ideas of what to do with the video to make it usable and profitable. New teachers are encouraged to follow the instructions in the video workbook step by step. In addition, students can use the CD-ROMs autonomously, either at home or in the lab.

PRACTICAL IDEAS

Consider Your Budget

Make sure, before you undertake a project such as this, that you have the resources, financial, human and technical, to create satisfactory materials. This is a time-consuming project and you need support from your administration and colleagues. Your budget must allow for planning time as well as staffing and completion of the project.

Involve Stakeholders

If you are considering creating your own multimedia courseware, involve all parties in your initial explorations of video and CD-ROM materials. What kinds of approaches do instructor's favor? What grammatical structures and conversational collocations do student need to use in their interactions with native speakers?

Consider Legalities

Although technology is becoming easier and more affordable, the interview phase of Real English was extremely complex to pull off and very costly. Approaching passersby in the street and getting permission from them to use the video of their interviews while keeping the whole situation natural is a very tricky affair, to say the least. In the very early years of interviewing, our approach was informal and effective. In later years, when we realized that there might be legal implications, we became more careful, and the quality of the interviews immediately suffered. We refined our approach to walk the fine line between legality and spontaneity. It is wise to begin with a clear legal release form that protects you from later complications.

Avoid Tape Overkill

The choice of interviewees and settings proved to be as difficult as obtaining releases while remaining spontaneous. An extraordinary number of the people we chose to approach turned out to be incomprehensible for one reason or another. Also, a lot of the videotape contained too much street noise, such as people yelling, tires screeching, horns honking. Some of these background noises are always present in the final edits, but there are limits to the value of this kind of reality in instructional materials. Also, the cameraman was sometimes wobbly, unfortunately while taping some of the best subjects, who are, therefore, never seen. If you are making your own video footage, be prepared for many disappointments and much wasted footage.

Research Before Choosing Equipment

Good video and sound quality require some experimentation with different types of equipment, but the basics should include a digital camera and a high quality microphone. Taping on busy streets meant we had to use wireless microphones to avoid the hazards of pedestrians falling over wires. We had to invest in a whole array of different types of wireless transmitters and receivers in order to avoid interference from police and emergency service frequencies. Sometimes, especially in U.S. cities, it was impossible to find free radio frequencies, obliging us to be extra careful with our traditional wire microphones.

Choose Your Team With Care

The absolute minimum personnel for a project based on live native speakers is a team of three:

- One person has the job of approaching passersby. This person must explain what is going on, give out business cards and otherwise reassure the potential subjects that everything is on the level. This contact person tries to obtain a release without making the interviewee think he or she has to perform. The contact person is often doing the job while an interview is in progress.
- A second person performs the interviews. This person often approaches the passersby together with the first person.
- The cameraperson, who doubles as soundperson, is in constant contact with the interviewer using a second wireless communications system. Both cameraperson and interviewer wear wireless lapel microphones and headphones.

Keep Comprehensive Records

An essential aspect of a video or CD-ROM project is record keeping. Once the taping is completed, the long and tedious task of logging begins. It took two people 8 months to transcribe all 90,000 lines of speech in Real English into a database. This is the only way the tape can become usable while maintaining the spontaneity. Without knowing the exact point on each tape to find every question, every answer, every grammar structure, every accent of every interviewee, the strong and weak points of each group or person, and other helpful details such as the visual background and the overall quality of the video, the content would be useless. It is essential to allow sufficient time and person-hours of labor to create accurate and detailed records of your footage.

Allow Time for Editing and Programming

The technical aspects of creating the CD-ROMs include digitizing, editing, creating relevant music, mixing the music, finding the exact frame where each video should be stopped and started for the listen/record/compare activity, and so on. Then the exercises are written, including a step-by-step scenario for the programmer, with literally hundreds of notations, such as a sound file to introduce a lesson—and then the creation of these additional sound files themselves. The first two CD-ROMs in Real English contain more than 2,700 sound files each. Finally, the scenario and all the files are given to the programmer, who assures that, after much give and take and argument between programmer and author, it all works together without a bug (insofar as that is possible in the world created by Microsoft). Fortunately, the software for programming and digital editing is forgiving. Just remember, it is also very time-consuming.

CONCLUSION

Real English has been an adventure for the creators. At the very least, interviewing people on the streets of the world has been the most interesting possible way to visit all the countries where we went. It was a pleasure imagining this project and carrying it out. The real fun we had often shines through in the video, and it seems hard to let go of the project. We find it difficult to say, "OK, here you are, Real English CD-ROMs X, Y, and Z are finished." They never seem finished.

Although the effectiveness of any approach is difficult to measure, the instructors using Real English as an approach to language teaching think they have prepared their students better for the initial shock of their first arrival in English-speaking countries. Even if the students cannot understand something elementary, they are less likely to freeze up or get upset about it. They understand that many people simply pronounce badly, and that speech at normal speed is in fact very fast for anyone learning a language. They are more likely to make their interlocutors repeat, or to ask them to speak slowly. They are more philosophical about the whole thing, more relaxed. In the end, they are more likely to communicate.

CONTRIBUTOR

Michael Marzio, after Master's work at New York University, went to France on vacation and stayed. He founded a language school with his wife, Valerie, in Provence in 1976. ESL video production was at first a part-time passion and later a full-time activity. Real English on video and CD-ROM is his latest production.

PART 3

Engaging Students

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CHAPTER 7

Investing in People, Not Just Flashy Gadgets

Jane Averill, Eve Chambers, and Maria Dantas-Whitney

INTRODUCTION

The English Language Institute (the ELI) at Oregon State University (OSU) has developed an innovative curriculum that integrates technology into its classes. An active staff development program and a long-range plan for a self-access learning center were key ingredients in this development.

CONTEXT

Founded in 1965, the ELI has more than 30 years of experience in providing language training. The institute is an integral part of Oregon State University, a large Land, Sea, and Space Grant university located in Corvallis, a city of 48,000 people. Oregon State University has approximately 14,000 students, 10% of whom are international students, coming from more than 90 countries. OSU is noted for outstanding programs in engineering, business, agriculture, forestry, oceanography, and the sciences.

The ELI's mission is to prepare international students for academic study at a U.S. university. Our student body is predominantly Asian (80% in 1997), and the majority of students are in their late teens or early twenties. ELI students are fully integrated into OSU campus life, having access to the library, computers, recreation centers, and student events. Approximately half of our students choose to live in campus housing. Although the institute is self-supporting, our staff members are OSU employees. Our office is located on the OSU campus, and classes are held in OSU classrooms. (See the *English Language Institute* Web site, 1998.)

The program teaches an average of 180 students per term and has a staff of approximately 25 instructors, 20 of whom are full-time. We provide 18–24 hours per week of study in a six-level program, although most students begin at the intermediate level. The curriculum combines reading, writing, listening, and speaking in an integrated skills approach (see Table 1 for an ELI curricular overview). The average class size is 12–13 students in core classes, and 10–25 in elective classes. We run an 11-week program during the academic year and an 8-week program in summer.

Approximately 30% of the ELI students are conditionally admitted to OSU. Conditionally admitted students with a TOEFL (Test of English as a Foreign

Language, 1999) score of 133–172 study English full-time at the ELI. Those with a TOEFL score of 173–212 study part-time at the ELI and part-time at OSU. A score of 213 is required for full admission to OSU.

DESCRIPTION

The ELI's history of early development in technology is a key factor in its current distinctive program. Historically, individual ELI teachers have shown significant initiative and creativity in the use of technology to enhance the learning process. Financial support from the institution also developed early, starting in the form of a small amount of staff release time to establish a listening library. The Little Lab, as it was known, consisted of a collection of filmstrips, video- and audiotapes, slide shows, and audiotape recorders housed in a small, unused office. The use of technology grew to the point where the ELI had three more labs—for reading, computers, and listening/speaking—at different locations on campus.

In 1990, the ELI was granted space to consolidate all four labs into one learning center. At that point, the ELI allocated funds to hire an instructor as a full-time manager. This was an important step in the advancement of the use of technology because the manager could then serve as a resource and support person to instructors and students by making materials available and accessible. With easy access to hardware and software, instructors began integrating technology into their classes. A new class was developed, called Individualized Directed Learning, in which students determined their own linguistic goals, and then worked on them under the tutelage of their instructor. Staff for these courses must become very familiar with the technology available in the newly named Learning Center to effectively prescribe materials for students according to their individualized needs.

To keep up with the ever-present advancements in technology, and to capitalize on its strengths in this area, the ELI made an additional financial investment in staff development for technology. As part of a long-range planning session in 1994, the ELI created the part-time position of technology coordinator. The purpose of this position was to facilitate the optimum use of technology, encourage faculty and staff interest in technology, and explore sources of significant external funding for development projects. The institute also allocated funds to provide a comprehensive in-service training program, which gave release time to all core instructors for a 3-hour per week course in computer-assisted language learning, taught by the technology coordinator. Before the year of in-service training, there were two or three instructors with advanced technological expertise. Now, most of the 20 full-time instructors are trained to make regular use of technology in the classroom.

Throughout its development, the ELI held to its basic approach to technology: Technology should be used as a tool to enhance instruction rather than to replace the instructor. That philosophy, plus the fact that the decision for technological development was made by the faculty as a whole, helped ensure the success of this plan. In addition, the ELI's ongoing commitment to faculty development and its continued investment of resources in the Learning Center has allowed the expanded use of technology in many areas of the institute, including curriculum, student services, and special programs.

DISTINGUISHING FEATURES

Faculty Development

During the 1995–1996 academic year, the ELI dedicated 5% of its total budget to faculty development in the area of technology. The ELI gave release time to all of its core instructors, and paid its technology coordinator to teach a term-length course in computer-assisted language learning (CALL). This course has enabled our instructors to make significant advances in their use of technology in the classroom and to more fully utilize the resources in the ELI's learning center.

The course was designed with input from faculty members on goals and expectations. In the class, each person was asked to create a project that would bring benefits to both the individual and the program. About six faculty members participated in the training each term, allowing them to work on projects either individually or in groups and to have a forum for discussions. Projects included Web page creation, detailed lesson plans for ELI software, and customization of software for specific ELI classes. In addition to helping faculty members gain practical skills in CALL, these projects served as springboards for future faculty development.

As a way to build on the momentum gathered by the initial investment in faculty development, the ELI has utilized faculty "sharing seminars" once a term in the learning center. During these meetings, instructors share innovative uses of technology they have developed for their classes, such as a Web page designed for a course, the use of e-mail news groups with students, or demonstrations of newly purchased software. These sharing sessions have become extremely popular among teachers, and have encouraged them to use their new knowledge with their students and to continue to improve their technological skills on their own. We have had presentations on a wide variety of topics, ranging from word processing and e-mail lessons to HyperCard (1997) stacks and Web pages designed for specific courses. The underlying message relayed during these meetings always is: "If I can do it, you can, too!" Teachers feel encouraged to see their colleagues trying new things, and they get the message that it is acceptable to ask each other for help.

The ELI Learning Center

The ELI Learning Center is the focal point of many of our classes, and, in some ways, it defines our curriculum and the identity of our institute. Our students meet there for classes at least 4 hours a week, and use it as a place to study during open hours in the evenings and on weekends. We also use the Learning Center to conduct professional development and sharing seminars for our faculty.

Our Learning Center is a state-of-the art facility consisting of four interconnected rooms (see Figure 1).

- The computer room is equipped with 22 Macintosh computers with CD-ROM drives, a projection panel for whole-class viewing, an extensive collection of language learning software, and Internet access.
- The reading room has books and magazines for pleasure reading, skill-building workbooks, and a range of reference materials. In addition, the reading room has tape recorders and video stations with headphones so that students working in this room can be undisturbed. Because the

reading room is a designated quiet room, those who want to have a discussion are encouraged to move to the video/speaking room.

- The video/speaking room is set up for conversation groups, pronunciation work, and video recording and viewing.
- The fourth room is the control room, where students and teachers check out auditotapes, videos and software.

Most of our students come to the Learning Center during their free time to relax and study in a comfortable setting, or to check their e-mail. They have the added advantage of help from lab assistants—something they are not likely to get in the library or alone in their rooms. Many non-ELI university students, including international graduate teaching assistants and international scholars, use our Learning Center as well. Because the ELI Learning Center is the only instructional space on campus that is truly ours (we share classroom space with other departments), and because so many of our classes are held there, this facility has become the nucleus of our program, both for our students and for our faculty.

The IDL Class

The Individualized Directed Learning (IDL) class is at the heart of the ELI curriculum (see Table 1, ELI Curricular Blueprint). IDL is a self-directed learning course required for students at every level. In this class, with the guidance of the teacher, students gradually develop skills in needs-assessment, goal-setting, and self-evaluation. The first meeting of each IDL class is devoted to orientation to make students aware of the rich resources available in our Learning Center through games and other activities. Next, students are encouraged to analyze and prioritize their learning needs, and to reflect on preferred learning styles and strategies. They fill out a Student Interest Questionnaire that is designed for this purpose (see Figure 2). Using the information from this questionnaire, the teacher prints out a list of recommended materials for

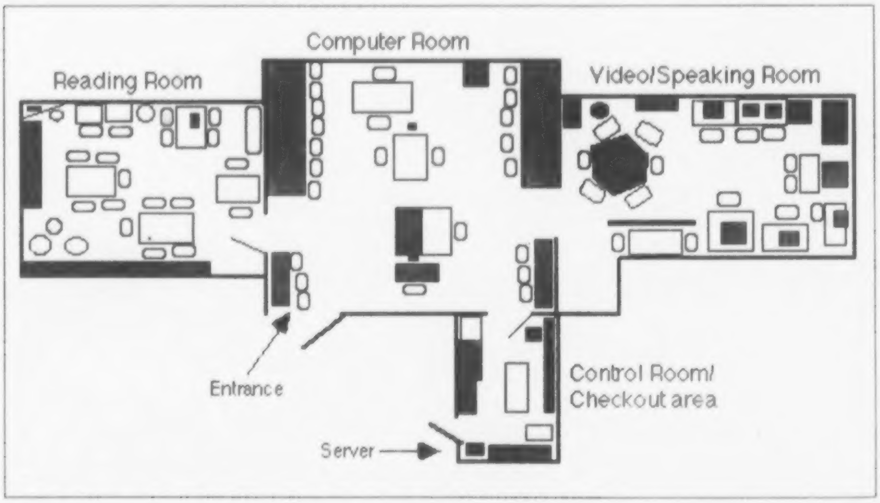

FIGURE 1. ELI Learning Center Map

TABLE 1. ELI CURRICULAR BLUEPRINT

Levels 1–4

A typical program follows the sequence below

1	110* Integrated English Skills: Beginning	117* Grammar	113 IDL* (Individualized Directed Learning)	** Level 1 courses will be offered if there is sufficient enrollment*	
	(12 hours)	(3 hours)	(3 hours)		
2	120 Integrated English Skills: Basic	127 Grammar	123 IDL (Individualized Directed Learning)	Optional Module: 114 Traveler's Workshop	
	(12 hours)	(3 hours)	(3 hours)	(3 hours)	
3	130 Reading/ Writing	131 Listening/ Speaking	137 Grammar	133 IDL (Individualized Directed Learning)	Optional Module: 114 Traveler's Workshop 125 TOEFL Prep. I 135 Computer Language Learning 138 Pronunciation
	(6 hours)	(6 hours)	(3 hours)	(3 hours)	(3 hours)
4	140 Reading/ Writing	141 Listening/ Speaking	Required Module: 125 TOEFL Prep. I 135 Computer Language Learning 138 Pronunciation 142 Movie Mania 145 TOEFL Prep. II 147 Grammar	143 IDL (Individualized Directed Learning)	Optional Module(s): 125 TOEFL I 135 Computer Language Learning 138 Pronunciation 142 Movie Mania 145 TOEFL Prep. II 147 Grammar
	(6 hours)	(6 hours)	(3 hours)	(3 hours)	(3 hours)

Continued on p. 90

Table 1. ELI Curricular Blueprint, *continued*

Levels 5 and above

An individualized program is designed using the courses below.

Core Classes:

150	151	154	160	161	162
Reading/ Writing	Listening/ Speaking	Advanced Academic Preparation	Reading/ Writing in Academic Research	University Listening/ Speaking	Reading/Writing in Academic Content Areas
(6 hours)	(6 hours)	(6 hours)	(3 hours)	(3 hours)	(3 hours)

IDL or Guided Observation:	Modules:
153, 163 IDL Individualized Directed Learning	138 Pronunciation 142 Movie Mania 145 TOEFL Prep. II
(3 hours)	147 Grammar 156 Exploring the Internet
and/or	157 Grammar 158 Advanced Conversation
152 Guided Observation	165 TOEFL Prep. III
(6 hours)	(3 hours)

each student. Then, during an initial conference, with the guidance of the teacher, the student narrows down the selection of materials. Many teachers also use this initial conference to negotiate a contract with each of their students. In this contract, the students plan future studies by outlining specific goals, learning activities, ways to demonstrate achievement, and a time frame. The students then begin working on their goals, with the teacher and lab assistants available for help. Students keep a daily record of their work, which allows them to evaluate their progress over a period of time. This daily record is used as a basis for the teacher/student conferences that take place throughout the term. During these conferences, students look at their progress and occasionally reevaluate their goals in response to their changing needs and interests.

On any given day, someone entering the Learning Center might observe a wide variety of activities taking place in conjunction with the IDL class. Students may be word processing compositions or working on speed-reading software. In another room, a pair of students may be watching a videotaped lecture, while a group of students listen to TOEFL audiotapes. Around a table, four or five students may be talking with a native-English-speaking conversation leader. The teacher may be moving from student to student, helping with equipment or language as necessary, or sitting at a table with a student, having a brief conference about learning goals.

The IDL class is an important feature of our program because it introduces flexibility into our curriculum and allows for different learning modalities and learning speeds. It also fosters student responsibility and independence by transfer-

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ring the power of choice of material and content from the teacher to the student. The Learning Center is the ideal setting for this class because of the array of technological resources readily available there.

Other Courses and Services

Workshops

Much instruction takes place in the Learning Center. During the first week of the term, before classes begin, new students participate in word processing and e-mail workshops where they learn how to access their university e-mail accounts and how to operate the basics of a word processing application. These workshops are important because they prepare students for the requirements of many of their ELI classes.

Reading and Writing Classes

Other ELI classes, such as weekly reading/writing classes, are also held in our Learning Center. During their weekly lab hour, students work on a variety of skills, such as reading comprehension and speed, vocabulary and grammar (using many of

Student Interest Questionnaire

Individualized Directed Learning (IDL)

Name ______________________________

Country ______________________________

ELI classes ______________________________

How long do you plan to study at the ELI? Circle one:

3 months   6 months   9 months   1 year or more

What do you plan to do when you finish your English language classes?

A. ______ Go back to my country.

B. ______ Go to a university or community college to study for a:

_____ Bachelor's degree _____ Master's degree _____ PhD

If you checked that item, please complete the following.

My major field will be ______________________________

C. ______ Others: ______________________________

1. What do you do best in English?

_____ listening _____ speaking _____ reading _____ writing

2. What do you need to work on?

_____ vocabulary _____ listening _____ grammar _____ reading

_____ speaking _____ writing _____ other: ______________

3. Do you know how to type using all ten fingers? ____________

4. On the next page, there is a description of the different areas you can work on here in the IDL lab. Read it carefully. Then, answer question No. 5 below.

Continued on p. 92

FIGURE 2. Sample Student Questionnaire

5. What are three skills you would like to develop in this IDL course?

a.) ______________________________

b.) ______________________________

c.) ______________________________

VOCABULARY

_____ Increase vocabulary (learn synonyms and antonyms; recognize meaning from context; study affixes and roots)

READING

_____ Improve reading comprehension (learn skills such as finding the main idea and making inferences)

_____ Increase reading speed

_____ Read extensively (read long passages and entire books)

WRITING

_____ Improve writing on the sentence, paragraph and multi-paragraph levels

_____ Learn to take notes from reading or listening material

_____ Learn to write summaries of, or reports on, reading or listening material

GRAMMAR

_____ Work on grammar trouble spots that frequently occur in your writing

LISTENING

_____ Practice listening to short conversations, lectures, stories, or songs

_____ View video presentations

SPEAKING

_____ Improve pronunciation

_____ Learn to be an effective part of a discussion group

MISCELLANEOUS

_____ Learn to word process

_____ Practice typing on the computer (learn correct hand placement; increase speed)

_____ Improve handwriting

_____ Improve spelling

_____ Prepare for the TOEFL

FIGURE 2. Sample Student Questionnaire, *continued*

our software programs), writing and revision (using word processing), research skills (using remote access to the university library and search engines on the Internet). Many reading/writing teachers also use the Learning Center hour for content activities based on specific Web sites or videos. For example, in a unit exploring the media, students might access the Web site of a newspaper, such as the on-line version of *USA Today*, for a reading/summarizing activity. During the same unit, they might watch video recordings of TV news programs to compare the way the news is presented on television and in the newspaper. For a unit on recycling, students might access the Web site of their local waste disposal company to learn about recycling services offered in their area. In conjunction with this unit, they might watch the segment "Recycling and Other Solutions to the Trash Problem" of the video *Focus on the Environment* (Stempleski, 1993).

Elective Courses

Several of our elective course offerings are taught in the Learning Center as well. A course entitled "Computer Language Learning" introduces students to databases, spreadsheets, word processing, and drawing programs. Another course, "Introduction to the Internet," focuses on conducting effective Internet searches, creating simple Web pages and using special features of e-mail programs (e.g., creating a mailing list, or "chatting" in real time with another person on campus). Our elective course in pronunciation is also held in the Learning Center, enabling the teacher to take advantage of pronunciation software programs and video resources located there.

The Communication Station

Students who want to work on improving their pronunciation can also use the Communication Station, which is located in the Video/Speaking Room of the Learning Center. The Station is a self-study area consisting of two computers, a camcorder and a VCR. Students may use pronunciation and other speech-improvement videos, audiotapes, software, texts, and handouts, as well as pronunciation assistants for live feedback. Pronunciation software developed at the ELI enables learners to track their progress, get suggestions about what to do next, and link to computer-based resources. Commercially available software is also used as part of the Communication Station and may be referenced at the archived *Technology Tips of the Month* for June 1988: *Pronunciation Software* (Healey, 1998).

Learning Center Services

Our Learning Center is managed by a faculty member, who is responsible for the daily upkeep of equipment and materials as well as for training the assistants who work there. Lab assistants check out materials and help students with questions; other assistants offer writing and pronunciation help. When students need advice on revising a paper or preparing for an oral presentation, they make an appointment for a session with one of these assistants.

Student Services on the Web

World Wide Web use is another distinguishing feature of the OSU ELI. The ELI Student Services office has made use of a Web page and links to help students adjust to life at Oregon State and the United States in general (see *English Language Institute Services to Students*, 1999). Students are referred to this page for admissions and prearrival information before they arrive in the United States, so they can be better prepared upon arrival. Once on campus, they can browse through the latest immigration issues, find on-line news in many languages, or discover activities available at the ELI, on the OSU campus and in the community. They can connect to travel information, and even receive on-line help for orientation sessions. They can find on-line copies of newsletters that were sent out in paper form during previous terms. The site connects them to links throughout the United States with information on cultural adjustment. Because our students have been well oriented in the use of technology early in the program, many of them take advantage of the information offered on this site, in addition to visiting the International Student Advisor's office.

This Web site is just one of the new projects that faculty members have undertaken since completing their technology training course. It exemplifies how the ELI expense for educating faculty is being paid back in terms of instructional innovation and an atmosphere of contagious creativity.

Use of Technology in Special Programs

The ELI has a Special Programs Office overseeing the operation of contract programs, including teacher education, business, and language and culture (see *International Special Programs*, 1998). Within the last few years, technology has become a more integral part of the design and execution of these special programs. Sponsors of such programs are attracted by our ability to provide instruction in the use of e-mail, creation of Web pages, and the teaching of specialized vocabulary for technology. We often craft preacademic programs, including instruction in the use of computerized library research and Web-based research tools, such as search engines. Each year we offer special workshops to prepare teachers to use CALL.

The technological component in the curricula of these short-term contract programs offers faculty members the opportunity to teach skills to students who are highly motivated to learn and who are thus able to access tools they otherwise might not use. In this sense, students gain skills they view as useful and use English as the medium for communication of ideas that are important to them. For example, in one program in the summer of 1997, students were taught to use e-mail very early in the program in a workshop lasting about 2 hours. Many students then used their e-mail skills in communicating with their teachers about class work and in contacting other staff members involved in the program. Following the program, a significant number of students continued to stay in touch with student assistants months after their return to their home country. Although in the past they have maintained this type of contact via regular post, the e-mail connection now allows for a quicker exchange, perhaps making the communications seem less removed from the experience.

There are myriad logistical challenges when incorporating technology into short-term programs. On our campus we must schedule lab space well in advance and be familiar with the idiosyncrasies of each facility to be used. We also set up special accounts for members of these special programs who are on campus for periods as short as 2 weeks. Generally, however, the technological component of a special program gives students from other countries an opportunity to access some tools they do not ordinarily use.

In addition to contract programs for groups, the English Language Institute has, since 1996, conducted summer technology seminars for teachers from around the world (see *Teacher Training at the English Language Institute*, 1999). The seminars include weekend minisessions and weeklong sessions designed to give teachers actual hands-on practice in using technology. In order to learn how to use computers effectively, teachers must have the time to complete tasks under the guidance of an experienced master teacher. Perhaps because they are trying new tasks together, the participants in the sessions bond solidly and enjoy communicating with each other and the instructors after they return to their schools. Additionally, these seminars provide the opportunity for ELI staff members to apply new skills while assisting participants in the seminars.

Practical applications drive the curriculum of the technology seminars. Although computer classes on use of software abound, teachers often lack the time and opportunity to develop computer applications for their own particular teaching situations and students. With expert guidance in enhancing their lessons with technology, teachers can analyze their situations, take advantage of the tools that have been collected for this purpose, and effectively and efficiently create innovative uses of technology for their own environments.

PRACTICAL IDEAS

Through our experience with integrating technology into the curriculum, we have learned a great deal. Some ideas have been successful; others have not. We have analyzed our experience and would like to offer the following advice to others about to undertake a similar venture.

Develop a Long-Range Plan

Before embarking on an endeavor in technology, take some time to create a scenario describing your ideal program. You may not think your goals are achievable, but having a plan in place makes it much easier to seize upon an opportunity if one arises. For example, in the 1980s, when an ELI task force created a plan for an ideal learning center, there was very little hope that such a dream would ever materialize. Yet within 10 years, the plan became reality through a series of incremental steps. It is also important to have the participation and backing of the whole staff in long-range planning. If it is impractical to have each staff member participate directly, charge a committee with the task of brainstorming and presenting a plan to the staff. The plan should include a short list of specific goals and a definite time line.

Allocate Funding and Staffing to Implement the Goals

The implementation phase is as important as the planning phase described above. Without substantial resources behind it, even the best plan will lead nowhere. Names and dollars must be attached to a plan if it is to be effective. For example, in their strategic planning document, the ELI set the goal of developing expertise in delivering instruction through new technology (Chambers, 1994). To pursue this goal, the ELI created the new part-time position of technology coordinator described earlier and set aside 5% of its budget for a year to pay for release time so that staff members could develop more expertise with technology. This move was in accord with suggestions by the President's Committee of Advisors on Science and Technology (1997).

Provide Ongoing Faculty Development

Once the initial investment in faculty development is completed, it is important to capitalize on this investment by encouraging ongoing professional growth. At the ELI, the CALL-training course for core teachers was regarded as a small "push." Subsequently, to keep the momentum from this push going, sharing seminars for faculty are now scheduled once a term. As a result, instructors who have gained knowledge in particular areas serve as peer coaches for each other.

Expect Incremental Change

In our experience, institute-wide changes have happened incrementally, so faculty development opportunities had to be cultivated for the long term. Not all teachers were ready to try new things at the same time, but, as long as a supportive and collegial atmosphere was sustained, individual teachers felt comfortable developing new skills at their own pace, and the whole institute benefited as a result.

Keep Long-Range Goals in Mind When Filling New Positions

In our case, as teachers became more proficient in technology, and curricular changes were instituted, new expectations had to be set for the hiring of instructors. New teachers coming on board had to possess technological skills commensurate with or surpassing those of existing faculty.

Ensure That Students Can Take Advantage of Technology

First, students must have easy access to tools they can use. They should be able to use labs, dial-in facilities or terminals in dormitories at hours that are convenient to them and that require little or no additional cost. They must be trained to use and feel comfortable using the technology. Technical support should be available for hardware and software problems.

Use Students as Resources

Students' enthusiasm for technology can be tapped as a resource in the classroom. In many cases students have a particular form of expertise that they can share with each other, thereby increasing their classmates' knowledge while giving the students who are teaching a chance to show off their skills. Using peer mentors helps bring the slower learners along. The ESL teacher can structure lessons around communication between students and set up a buddy system in which students work together. A buddy system permits students to practice speaking and listening with each other, while completing assigned lessons.

Make Computer Expertise a Priority in Hiring Student Assistants

Student assistants can perform such tasks as setting up e-mail accounts, helping in the classroom during instruction time, troubleshooting, and answering student questions informally. In addition, their presence in the classroom provides ESL students with increased contact with university students.

Take Advantage of Existing Facilities in School and Community

At the ELI, we regularly use labs from other departments or from the local high school when they are not occupied. We have also considered using facilities available to the public in libraries and community centers as a backup if we cannot find space on campus. As an alternative to using a lab, we have used a single laptop computer for whole-class or group work, for example, running a simulation for a business ESL class. Finding a single laptop is less challenging than finding an entire lab and can still provide a simulating new experience for students.

Always Have a Back-Up Plan

When a session goes exactly as planned, the magic of technology is impressive. Students are usually very enthusiastic about using technology and appreciate the efforts of teachers to present material through a new medium. However, despite the best laid plans, there are bound to be some challenges in using technology in the classroom. Even when a teacher practices something in advance, there is no guarantee that the actual session will go as planned. We have learned to prepare alternative plans that can be quickly and efficiently implemented. For example, when demonstrating software on a projection screen, we might bring along some transparencies of the key features just in case the computer freezes or the projection device does not work. We might also have an alternate lesson plan that could be used if a workshop has to be canceled at the last minute.

Line Up Support Services Ahead of Time

When the hardware breaks down, the software is inscrutable, or the cables fail for some unknown reason, what do you do? Reliable repair service is needed for the serious problems. At the ELI, to explain and help solve those inevitable problems, we contracted with a graduate student in Computer Science to be our on-call troubleshooter. This has worked well because he was acquainted with our equipment and understood our computer needs. Another possibility for support service is a maintenance contract with a computer department on campus or with a local computer store.

Take Advantage of Professional Resources

ESL teachers can attend workshops through international TESOL or TESOL affiliates. Some institutions offer technology seminars designed specifically for language teaching professionals, such as those offered at the ELI on a yearly basis. Help also is available on the World Wide Web; for example, the ELI Web site includes a *Technology Tips of the Month* page (Healey, 2000).

CONCLUSION

Technology use has played a large role in the curriculum at the English Language Institute, especially over the past 10 years. That use was promoted by the teachers and supported by financial commitment on the part of the institution. The investment made in teachers has been paying off. Teachers talk about being energized by new approaches to their work. The driving philosophy behind the decision to incorporate technology was best summed up by our technology coordinator, Deborah Healey, when she said: "People, not machines, should drive curriculum. By focusing on teachers and learners, we hope to ensure that the ways we use technology will be firmly based on pedagogy rather than on the latest and flashiest gadget" (Healey, 1995). Because technology helps create a sound pedagogical environment that fosters student interaction, creativity, and self-reliance, it functions as a powerful tool that enables our program to fulfill its mission of providing learners with the necessary skills for successful academic performance.

◈ CONTRIBUTORS

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CHAPTER 8

Immersed in Writing: Networked Composition at Kendall Demonstration Elementary School

Joy Kreeft Peyton

INTRODUCTION

Interactive writing on computer networks, both in real time (through synchronous chat programs) and nonreal time (through e-mail) has become relatively commonplace in education in the United States in the past few years—in public schools, community colleges, and universities, with students of varying ages, language and cultural backgrounds, and English proficiency and literacy levels. Though most of the students interacting on computer networks are hearing, the practice of real-time written interaction on computers originated in 1985 with deaf and hard-of-hearing students at Gallaudet University in Washington, DC, with the ENFI Project, originally, English Natural Form Instruction, later renamed Electronic Networks for Interaction. Trent Batson and a group of other English professors worked with a software developer to create RealTime Writer (1992), a software program that would allow deaf students to participate in conversations in English. The central idea was that if deaf students were going to be successful with reading and writing extended texts (books, essays, and other documents), they needed to be able to use English as hearing people use it—in authentic, interesting interaction, for their own purposes (at least some of the time), and with continuous feedback from others, both teachers and other students. How else could deaf students be immersed in English?

At the time, in the mid-1980s, networked writing was a very new idea. Most schools were not equipped with local area networks (LANs), and those that were generally used them as file servers, to make one computer program available to all class members. Extended, essayist text was considered to be very different from oral conversation, and there was little understanding of how developing conversational skills could have a positive impact on written language. Since then, much has changed. Computer networking, both local and over distance, is accepted practice, even in many elementary school programs. We have undergone a minirevolution in our understanding of what is involved in producing a piece of writing and of the roles that conversation and social language play in writing development.

By the late 1980s, the potential benefits of real-time written interaction for promoting the writing development of all students, deaf and hearing, became clear to educators across the country. New software was developed for this purpose

(Daedalus InterChange, 1997), and numerous projects were under way to implement and document the use of real-time computer interaction at the college level (see Bruce, Peyton, & Batson, 1993, for descriptions of a number of these projects).

At the same time, educators and researchers at Kendall Demonstration Elementary School, located on Gallaudet's campus, began a project to implement and study the use of computer interaction with younger deaf and hard-of-hearing students in elementary and middle school (see Peyton & French, 1996; Peyton & Mackinson, 1989). Teachers and researchers worked together for 2 years to develop and document networked activities consistent with the whole language program then in place at the school, and to evaluate their effectiveness.

In this chapter, I describe the networked classes at Kendall School and the distinctive features and benefits of the written interaction they enabled, and make some suggestions for others seeking to implement such a program. Although our work was with deaf and hard-of-hearing students, the lessons that we learned at Kendall have application for classes of hearing students as well, and I hope that this chapter is useful to teachers and program administrators who desire to use computer networks and interactive writing to develop the English literacy of all their students.

CONTEXT

Students at Kendall using the computer network were 7–13 years old. Their English proficiency ranged from minimal (able, with help, to type very limited messages a word or two long) to highly proficient (equivalent to a hearing student writing at or above grade level). Their proficiency in American Sign Language (ASL) varied as well. Some of the students using the network were in the Special Opportunities Program, and, in addition to deafness, had handicapping conditions that caused significant developmental delays and affected many aspects of their learning.

Computer classrooms can be set up in a number of ways (see, e.g., Bruce, Peyton, & Batson, 1993, for descriptions of various options). At Kendall, the LAN was set up in a computer lab, separate from the regular classrooms. Therefore, lab time had to be scheduled, and classes had to leave the classroom and walk to the lab, a process that could take as long as 10 minutes. Nine computers were arranged around the outside walls of the room, with the students' computers facing the walls and the teacher's computer facing the center of the room (so the teacher could easily follow activities in the room). There were three dot matrix printers spread among the computers (see Figure 1). Because the center of the room was empty except for a round table for magazines and papers, students and the teacher could easily turn in their chairs or walk around the room to interact face-to-face. The written interactions were often accompanied by signed discussions, before, during, and after the networked sessions. The amount of signed discussion that occurred depended on the English language proficiency of the students, with less proficient students requiring much more signed support than more proficient ones.

Teachers from a number of different classes (including language arts, science, social studies, and math) used the network for many different purposes. Because some wanted students to be able to use conversational English as hearing people do, they did not suggest topics or structure for the interactions. Instead they let the students chat about whatever they wanted to.

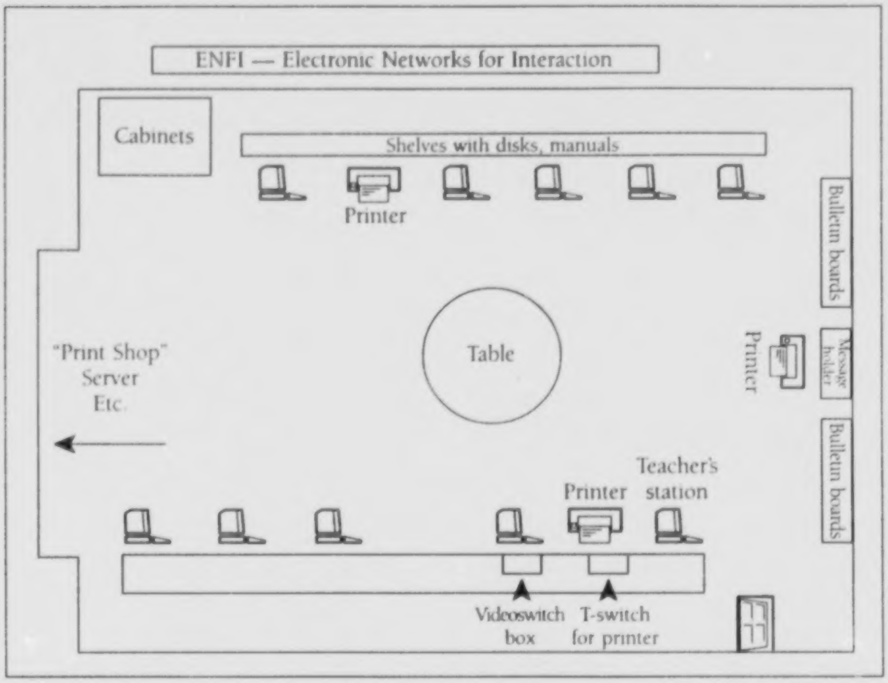


Figure 1. The ENFI Lab at Kendall Demonstration Elementary School. Computers are networked IBM PCs. Based on Peyton & French (1996). Reproduced by permission of Joy Kreeft Peyton and Martha French.

Others wanted the students to have a chance to play with English and so introduced language games, such as Twenty Questions (a very popular network game); listing aspects of deaf culture that start with the letters *a*, *b*, and so on; or, for the younger children, having them list all of the words that start with *a*, *b*, and so on, or words that start with the last letter of the previous word (e.g., *banana, apple, elephant*).

Some (particularly the literature and content area teachers) wanted students to review, in written conversation, topics they had discussed in sign language in class, in order to help them make the transition to English vocabulary and expression and to more extended writing about those topics. One teacher developed problem scenarios to which the students provided solutions (e.g., "One boy in my class has never been to a dentist. He is afraid to go. He thinks the dentist hurts people. I told him that I like my dentist. What would you tell him?") and eventually gave the students the responsibility for creating the scenarios.

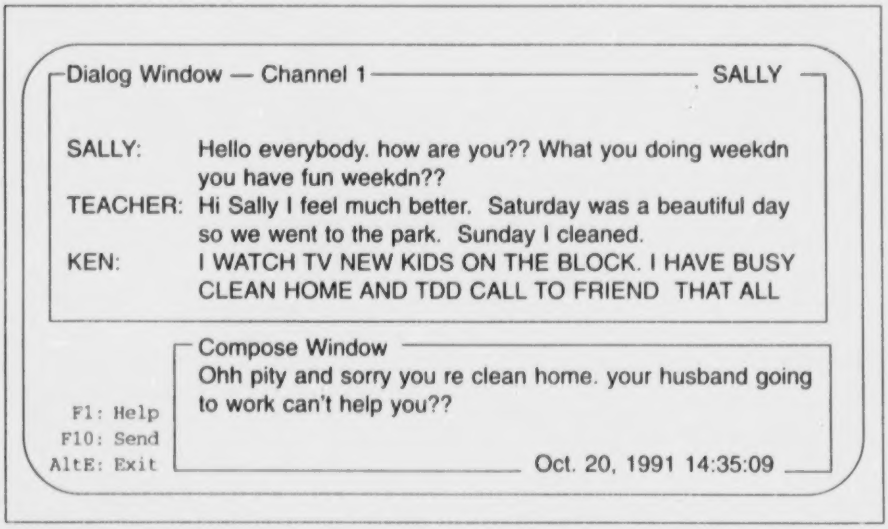
Some teachers structured the writing quite a bit, giving the students specific tasks to do, such as telling a story collaboratively, each student contributing a sentence that built on the previous contributions; writing *why* questions; or taking turns expanding simple sentences. For example, in one class "The boy walked." became "An ugly boy with crooked teeth grinned at every girl he saw and acted very macho as he walked to a bank unfortunately that time was a holdup going on."

DESCRIPTION

In order to determine if networked writing would benefit younger English learners, we selected six students to follow throughout 1 school year at Kendall. We collected transcripts of their network interactions throughout the year, interviewed the six and other students in their classes, and interviewed their teachers. We decided that we would consider the project a success if the students and teachers simply enjoyed reading and writing on the network (because reading and writing is often very difficult and painful for deaf students, and they often hate it) and if we could come up with a set of tested activities that seemed to work.

When they arrived at the computer lab, the students and their teacher each sat at a separate computer (some schools experimented with two students per computer; we paired students in this way only when a student needed a lot of help reading and typing messages). Class members logged on to the network with their own names or with pseudonyms (pseudonyms became very popular once students learned how to use them) and typed messages to other class members and the teacher in a private window at the bottom of the computer screen. When messages were sent, they appeared on all the other screens in an upper window, tagged with the name of the sender, and scrolled up the screen as other messages followed (see Figure 2).

Discussions could take place among all class members or between pairs or small groups of students on separate channels. We could make a verbatim printout of each written discussion at the end of each session (a very noisy proposition with the dot matrix printers, but that is all we had at the time, and it did not bother the students very much). These transcripts could be used for later discussion, analysis, or editing. Class members could also display completed or in-process extended texts on the screens of the rest of the class for review and discussion. Thus, students and the teacher could watch each other brainstorm, compose, revise, and edit. The intention



SALLY: Hello everybody. how are you?? What you doing weekdn you have fun weekdn??
TEACHER: Hi Sally I feel much better. Saturday was a beautiful day so we went to the park. Sunday I cleaned.
KEN: I WATCH TV NEW KIDS ON THE BLOCK. I HAVE BUSY CLEAN HOME AND TDD CALL TO FRIEND THAT ALL

Ohh pity and sorry you re clean home. your husband going to work can't help you??

FIGURE 2. On-Line Writing. Students compose before sending messages to running script of real-time conversation. Based on Peyton & French (1996). Reproduced by permission of Joy Kreeft Peyton and Martha French.

was to create a lively, collaborative environment where conversations and extended texts intermingled and built on each other, and where texts could be created and shared easily.

The following excerpt illustrates one type of computer interaction. It comes from a group of five 13-year-olds discussing with the teacher a poem, "Staying Alive in a Clear-Cut Forest" by David Wagoner (1987), that they had read the day before. (One student did not send any messages. Students' names have been changed. Their contributions are represented here as they were written, but excerpted somewhat.)

Bessie: I shall eat something that is edible then try to find my way out eating to survive on the way, sort of camping all alone but without supplies or something.
Teacher: How would you do those things? . . .
Cheryl: I think it's good, but why not get a book on survival instead? It'd be a lot clearer, too . . .
Cheryl: I mean the author's advice.
Denzel: Try to find a way out and see if there s anybody that I can ask for the direction out . . . .
Bessie: Wilderness! no one around for miles!
Teacher: Good question, Cheryl. Can anyone guess at why the author wrote a poem instead of an essay? . . .
Roseann: I would read the book of survival before i was on the trip. But what if it was unexpected trip like plane crashing in the top of the mountains.
Bessie: i dunno, He might be a person who loved to write poems instead of sensible essay type questions.
Denzel: Because it will be better to write a poem instead of a essay. Other reason may be because the story is short not long enough to write an essay . . . .

DISTINGUISHING FEATURES

Motivated Students

Probably the most compelling thing to say about the networked writing, at least from the students' perspective, was that it was enjoyable. Not all of the students liked writing on the network. Some complained that they preferred ASL to English and would rather spend their time in class signing. Some thought they were wasting their time writing on the network and wanted to get back to learning English, which they believed consisted of doing grammar and vocabulary exercises and writing paragraphs in response to essay prompts. But most of the students liked to write on the network and seemed to bring to it a sense of competitive play, as in this excerpt from a sentence expansion activity, building on "The boy walked."

Shari: The boy walked to a nearby mall.
Bessie: The messy boy slumped and dragged his feet as he walked down the busy district.
Cheryl: The hunchback boy slouched as he walked unsteadily to the styore.
Shari: The ugly looking white boy limped towards the busy district where he wanted to go to a store there.

Cheryl: The conceited boy grinned with a macho smile to the adoring crowd of girls gathered around him.
Bessie: The rich and goodlooking boy walked proudly to a busy district where he was run over by a red mercedes.
Shari: The rich spoiled boy walked very slowly, pushing girls out of his way. He jumped in the nearest sports car and drove of in the sunset.
Greg: And that car was a vw. buggy, shari. a 1657 vw.
Greg: I mean 1957 . . .
Gary: The little ugly strange lookin' boy walked limpy to the store and he drove a lamborgini back home but unfortunately he got a car accident and his limpy lamborghini is in the junkyard.

And so on.

Created a Highly Social and Interactive Environment

Another important feature of networked writing is that it is not solitary. Before interactive writing in dialogue journals (Peyton & Staton, 1993; Staton, Shuy, Peyton, & Reed, 1988), in letters (Heath & Branscombe, 1985), and on computer networks became acceptable educational practice, there was a general understanding among teachers and writing researchers that oral conversation and writing stood at opposite ends of a communications continuum designated *interactive* at one end and *monologic* at the other (e.g., Chafe, 1982; Olson, 1977). Although our ultimate goal was for students to be able to write extended texts and anticipate audience understanding and interest without an immediately responding audience, our students had had very little opportunity to use English (either oral or written) at all. Therefore, it seemed critical to provide a context for them to use it interactively as well as in more solitary ways. For a number of very good reasons we did not begin to explore the complex possibilities for integrating interaction and extended composition:

- Our technology was primitive compared to what is available now.
- The students were in elementary and middle school at the same time that they were English language learners, and so not working on extended writing to the extent that some classes are.
- Teachers were new to the medium and just finding their way.

Today's technology, which supports composition pedagogy, allows nearly seamless transitions from reading texts to interacting about texts to composing and sharing extended texts, which become reading texts to be interacted about, and so on.

Allowed Language Scaffolding

Because the dynamic of interactional scaffolding is so important in oral language acquisition (Bruner, 1975; Cazden, 1988), it was fascinating to see it occurring in the networked writing at Kendall as well. Interactional scaffolding occurs when a more competent user of the language interacts with a language learner in a supportive conversational context (e.g., a parent with a young child learning a first language, or a native speaker with a nonnative speaker of a language). The more competent language user facilitates the interaction by accepting the learner's utterances as conversational contributions and responding to them, modeling the correct use of the language, and providing language props that help the learner move to a new and more advanced level. Teale (1982) expanded this understanding of scaffolding to include literacy learning. He wrote that "literacy comes about as a result of the ways children interact with adults in problem-solving situations that involve reading and/or writing," and that these "literacy interactions . . . lead the child to internalize aspects of reading and writing and eventually to understand how to use them independently" (quoted in Lehr, 1985, p. 668). Before opportunities for interactive writing were available, language modeling in writing took the form of corrections to or comments on compositions, which students often considered to be already finished pieces. The uniqueness of the network is that language assistance can be provided immediately, in the midst of meaning making.

It is impossible in the brief space in this chapter to document fully the various types of scaffolding and language modeling that we observed, some of which took place over many turns, as students during the course of the conversation noticed and used the language of others to construct their own contributions. This was particularly exciting to see with beginning writers, who started with very few words, but gradually constructed their own writing, pulling from the writing of others and putting it together into something that was uniquely theirs. Here are just a few brief examples of ways in which the teachers helped the students, and students helped each other, with their writing.

Corrective Feedback

One way to scaffold was to provide corrective feedback, which students could then incorporate into their subsequent contributions.

Vincent: I know no well my family all no deaf here so but litle sing too but I ask follow hard understand sing about I want go eat McDonald . . .

Teacher: Vincent you said your family knows a little sing. Sing means to use your voice with music. You mean your family knows a little sign! Right?

Vincent: ohhh okk well my family not sing so sorry well my family sign right

Modeling

Language scaffolding does not have to be confined to specific spellings, vocabulary, or structures. An entire narrative or account can be modeled by the teacher or students. Below, a class was discussing what they had done in science class. Different students provided different accounts, some more and some less thorough. Then the teacher gave her own account, building on what the students had said and modeling the correct way to express it.

Teacher: Good morning, class!!! Let's talk about what we did in Science yesterday, okay?

Robert: . . . crayon with wax paper then sun after that then look pretty ??right??

John: first put waxpaper andput color another waxpaper and iron and melted and dry for five sec gule on paper and dry then on window then sun look pretty are i right?

Tammy: I made Science of the leaves maybe today for small two leaves
Teacher: John, Wow, yes, you are right!! We put shaved crayons on wax paper then we put another sheet of wax paper over the crayon pieces. We ironed the crayon pieces. The crayons melted. We then framed the melted crayons in a leaf frame.

Elaboration

In the example below, the teacher's question encouraged a student to elaborate on his originally limited description of his science fair project. (The teacher used the students' names in her turns, so they would know to whom she was directing her comments, because she was interacting with several students at one time.)

Mike: . . . i want science fair i want a soda project ok ..
Teacher: Mike, that's a wonderful idea about doing something with soda and it is a liquid too. [Another student had written that she wanted to do a project with liquids, and the teacher was picking up on that term.] Is there something you want to know about soda?
Mike: . . . this soda have many different kind of name soda then check many have soda of score and point . . . then go down stair to class then i will tell to student many count for soda. . . . My soda title is "whaty your prafec of kind soda for K.D.E.S."
Teacher: Mike, that would be interesting. What soda do you think would be students' preferred drink?
Mike: I think student like a Pepsi.

PRACTICAL IDEAS

As described above, the teachers at Kendall developed a number of activities for the network, depending on their curriculum, their students' English proficiency levels, and the goals they had for their students that year. (These activities and others are described in detail in Peyton & French, 1996; activities for college students are described in Bruce, Peyton, & Batson, 1993.) Because teachers will have their own goals and needs, I do not describe any one activity in detail here. The types of activities that can be developed are endless. More critical is a description of the factors that were found to influence the success of the networked sessions and to shape the quality of networked discourse, making it more or less successful. I describe these factors briefly here.

Emphasize the Importance of Networked Composition

Schools are very busy places, and school staff members are constantly bombarded with new ideas, materials, and mandates. Kendall is probably typical of most schools. The networked writing project (called ENFI at Gallaudet and Kendall) entered into this hectic setting, and sometimes we wondered if it would survive. Because some teachers had to choose among a number of good options for their students, some tried ENFI and dropped it right away. The teachers who stuck with it and developed a rich and robust practice were those who put high priority on their students' English language development, saw networked writing as a powerful way to accomplish that, and adapted its use to meet their students' needs.

A commitment to English development and the belief that the network will make a positive difference will keep teachers going, and improving, amidst the competition of assemblies, other new curriculum units, and other computer programs (e.g., grammar and vocabulary development software).

A number of on-line newsletters, such as *Wings* and *KAIROS*, provide users of LANs with information from real teachers experiencing the difficulties and enjoying the benefits of classes based on network technology. Articles in *Language Learning and Technology* (an on-line journal, although primarily research-based) also contain ideas for classroom activities as well as research processes and outcomes (see also articles in Egbert & Hanson-Smith, 1999).

Locate the Computer Lab for Easy Access

Computers are much more plentiful in schools now than they were when we were involved in this project, and students and teachers have more ready access to them. The location of the ENFI lab, far from most of the classrooms, had a negative impact on teachers' commitment to going there and on students' attention once they arrived. Classes lasted for 50 minutes. Most classes met in their regular classrooms to get started, then walked to the lab for an ENFI session, and returned to the classroom at the end. Once students got settled down in the lab and signed into the program, they were lucky if they had 20 minutes to concentrate on their writing before they had to close down the program and walk back to class. Also, because the teachers had so much material to cover, they were reluctant to spend class time in this way more than once a week. They simply did not have the time. Almost all of the teachers said they needed much more time on the network to use it effectively—at least twice a week for 45 minutes minimum—and that they could have used the network more often and more effectively if it had been more accessible.

However, a feature of LAN-based computer software is that students may work on original messages and responses during self-access periods as well as during the free-for-all of real-time classes (see, e.g., Holliday, 1999).

Keep Groups Small

Because classes at Kendall are small, most of the classes that we worked with had fewer than 10 students, a luxury in most schools. Therefore, the number of participants writing on the network at the same time was rarely an issue. However, if too many students are on the network on the same channel, the interactions can get confusing and cumbersome because of the "multiple threads of discourse" that develop (Black, Levin, & Mehan, 1983; see, e.g., the discussion of "Staying Alive," on page 103), with a number of topics being discussed, or the same topic from a number of different perspectives, at the same time. Most teachers have found that around eight students is the maximum number that is manageable. For example, the American University in Cairo divides freshman composition classes into groups of about eight for LAN-based prewriting discussions. Some teachers have found that the best interactions occur among two or three students on separate channels. Current software makes it easy to create several small groups on line simultaneously.

Teachers can also structure the on-line interaction to varying degrees. In courses at the English Department at the University of Michigan, for instance, some instructors help slower readers by suggesting that students respond only to entries immediately above or below their own, rather than to an entire class; other faculty have students conduct one-on-one peer editing sessions (Hughes, 1994).

Provide Focus and Structure

Probably because networked writing was very new when we implemented the project at Kendall, teachers had a tendency to let the discussions evolve freely, believing that the opportunity to interact was valuable no matter what the topic or types of contributions from the students. Discussion topics ranged from weekend activities (a very frequent topic), to Christmas and birthday parties and presents, to movies the students had seen recently, and they meandered freely according to students' leads. However, in most classes, both the teachers and the students soon became bored with completely open-ended talk, such as "What did you do last weekend?" We found that students were much more attentive to the interactions, the contributions were more complex, and more mutual building of meaning and interactional scaffolding occurred (with students and the teacher introducing new words that others then picked up on and used) when a focused, academic topic was introduced than when the topic was more open-ended and personal.

The suggested topic could be as simple as "Today we are going to discuss the poem 'Staying Alive'"; or a more extensive introduction could be given, such as, "I saw on 60 minutes that the war is still going on in Iraq. Now there is oil in the gulf and many birds and fish will die. I hope this war will end soon." This teacher introduction was followed by one student writing: "Hello Vincent, What do you think about still war in Iraq? Birds and fish will die from oil in gulf," which was followed by a very long discussion about the damage of the war, a discussion that included students with minimal literacy skills.

This is not to say that teachers should necessarily control all network discussions by proposing topics and structuring the character and order of students' contributions. But they should be aware that unless a topic is proposed by someone, and everyone agrees to that topic, the discussion can range from one topic to another in a rather unfocused fashion, resulting in less scaffolding and vocabulary building.

Teachers also can develop more extended reading and writing activities that precede and follow network interaction so that it flows smoothly from and into other reading and writing (both social and academic). For example, in Basic Writing courses with older students at William Paterson College (Wayne, New York), Long and Vila (1997) helped students utilize write-to-learn processes and reflect critically on their own learning strategies, in conjunction with their network interactions. In a graduate Curriculum and Instruction seminar taught at the University of Illinois, Urbana-Champaign, students read and communicated about published articles by researchers and writings by class participants, and wrote their own essays using information gained in the discussions (Gruber, Peyton, & Bruce, 1995). Both Daedalus and CommonSpace (1997), another popular LAN-based software program for collaborative writing, have helpful guides and users' electronic discussion lists at their Web sites.

Encourage Teacher Participation

The degree of involvement and ways in which the teacher needs to participate in networked discussions vary according to student age, maturity, and language proficiency. Because we were working with elementary school students, we found that it was critical that the teachers

- carefully lay out the networked task ahead of time (specifying, for example, that students should open the conversation with a greeting, pick a topic together and stick to it, and close the conversation);
- participate in the networked discussions to some extent; and
- review the transcripts in class with the students to discuss the qualities of good network interactions.

When no direction was given for the discussions and the teacher did not interact on the network with the students, network interactions gradually degenerated into shared insults or discussions of who loved or hated whom. The following brief excerpt from an interaction between two 8-year-old boys, on the network without the teacher and without instructions, illustrates this point.

Tim: john are you ok i am fine
John: what we team basketball out
Tim: YES JOHN I WANT TO PLAY BASKETBALL OUT SIDE JOSH DO YOU LIKE BASKETBALL JOHN AND I LIKE TO PLAY BASKETBALL AND BASKETBALL IS FUN
John: tech basketball
Tim: JOHN ARE YOU HUNGRY I AM HUNGRY
John: yes i am poor . . .

We even observed times when the students (who were among the top students in the school for their age) shown above discussing the poem "Staying Alive" degenerated into writing about "X loves Y" when left without direction. College teachers have also found that direction is critical so that discussions (whether about current events or peer review of draft essays) stay focused, productive, and civil (see, e.g., George, 1990; Kremers, 1990; Sirc & Reynolds, 1990).

Plan Classroom Layout Carefully

The physical layout of the networked classroom was much more important at Gallaudet and Kendall than it would be in a class with hearing students, who can talk to each other easily as they write. As mentioned above, the open space in the middle of the room allowed students and the teacher to walk around, look at each other's computers, and provide signed support when needed. Some students initially could not write and read others' writing at all without this support. Different schools will have different priorities and constraints (see van Lier, 1998, for discussion of various options and their advantages and disadvantages), but we felt that an open space, with a table in the middle of the room for students to gather around when desired, allowed easy and helpful transitions between print and face-to-face interactions.

Allow for Differences in Student Proficiency

Obviously, students' English proficiency levels influence the writing that they can produce. We found that students participating in the same discussion, on the same topic, with the same teacher, participated in very different ways and at very different levels. Some of the students at Kendall wrote like native English speakers, above their age and grade level. Others could write nothing without signed support. (I imagine that much of the writing shown here is shocking to those used to working with hearing students.) Among our most exciting experiences was watching children who initially needed a constant companion to sign for them what others had written, and slowly fingerspell a message for them to write, become independent and not want to be bothered with a companion's help anymore because they knew what they wanted to write and, because of the writing they were seeing scrolling up the screen, had a good idea of how to write it. Gradually, all of the students we worked with became completely independent, and many of them made astounding progress in the complexity of their writing.

CONCLUSION

During the year of networked writing at Kendall, we saw impressive development in the students' writing (described student-by-student in the project annual report, Peyton, et al., 1993). We found that by the end of the year, the six focal students

- felt more comfortable and confident with writing on the network (and perhaps in other contexts as well) and more motivated to do it than they had been at the beginning of the year;
- were more engaged in the networked discussions, with the teacher and with each other—asking and responding to questions, seeking and providing clarification, expanding on their own and others' topics, and elaborating on their own contributions so that they were clear to others; and
- became more independent (especially those who had sought a lot of help early in the year) in writing their messages without prodding and sign language support.

Networked writing seemed to develop and reinforce some important conversational skills that the students needed to learn, such as initiating topics, staying on topic, requesting and providing clarification, elaborating, and asking and responding appropriately to questions. It also provided opportunities for attending to others' language, and for scaffolding and modeling language for others. These dynamics do not always happen in classroom interactions where the linearity of oral discourse may prevent easy review and acquisition of new words and structures. Most importantly it gave students a motivating and enjoyable means to develop their English.

CONTRIBUTOR

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CHAPTER 9

Enthusiasm, Experience, and Collaboration: Technology in the DEIL/IEI

Douglas G. Mills

INTRODUCTION

The Intensive English Institute (IEI) at the University of Illinois, Urbana-Champaign, has been enthusiastically involved in computer-assisted language learning since the creation of its multimedia lab in 1992 and in tapping the resources of the World Wide Web for ESL instruction since the creation of its *DEIL/IEI LinguaCenter* Web site in January of 1995. A key distinction of the IEI's program is the role it plays in teacher training for graduate assistants pursuing their MATESL degrees in the Division of English as an International Language (DEIL) through supervision and training by the core full-time IEI faculty. These dynamics, among others, have made the IEI fertile ground for the development of innovative approaches to the use of computers in ESL instruction.

CONTEXT

The IEI is a full-time English program with an average enrollment over the past 5 years of about 170 students per semester. As part of the University's DEIL, the IEI enjoys an integral relationship with the Division's MATESL program and the ESL courses offered to international students enrolled at the University. The IEI enlists the majority of its teaching staff through teaching assistantships given to capable MATESL students who are then supervised and trained by the institute's full-time core teaching staff. Thus, for many MATESL teachers-in-training, the IEI is a rich source of guided, hands-on practice that allows them to apply the principles, theory, and methodologies learned in their MA courses. In return, the IEI benefits immensely from the continuous stream of new ideas, the creative energy, and the tireless enthusiasm of its MA teaching assistants as they are guided by the more experienced full-time staff. It is largely this same mix of energy and experience that is behind much of the IEI's success in the use of technology.

During the past 5 years about three quarters of the IEI's students have been Asian, with the remaining students coming from Latin America, the Middle East, Africa, and Europe. Study in the IEI is primarily for students who intend to enroll in a U.S. university, although a fair number of "English-only" students who plan to further their studies or other pursuits in their home countries also attend. Most of the academically oriented students are not only in need of training in academic U.S.

English and culture but also secondarily in need of preparation for the growing reliance on computers and the Internet in the U.S. higher educational environment. Many of the students who come to the United States only to study English are eager to improve their future marketability by learning new computer skills as well.

In 1992, the IEI completely renovated its traditional 16-station audio lab, turning it into a 20-station state-of-the-art multimedia lab, which was named LinguaCenter. LinguaCenter was designed for use by individuals and classes. It is typically open about 40 hours per week for self-access walk-in use and is reserved for class use an average of 15 hours per week. Due to scheduling pressures in LinguaCenter, the IEI is often obliged to make use of other computer labs as well. During the fall of 1997, for example, the IEI reserved other labs on campus an average of 8 hours per week. LinguaCenter is supervised by the DEIL/IEI computer-assisted language learning (CALL) coordinator and is staffed by four 33% graduate assistant lab monitors who assist students during walk-in hours and assist teachers during class reservations. Additional technology-related personnel include the assistant to the CALL coordinator, a 50% graduate assistant who handles much of the day-to-day operations of LinguaCenter as well as sharing in technical support throughout DEIL/IEI; the *ExChange* coordinator, a 17% graduate assistant who coordinates the volunteer editors working with the *ExChange ESL Magazine* project (1999); and occasional special assistantships for special projects. In addition to LinguaCenter, DEIL/IEI also maintains a computer workroom and computers in every teacher office. All of DEIL's computers have direct access to the Internet. LinguaCenter took on a virtual expansion program in January 1995, when the *DEIL/IEI LinguaCenter* Web site was created.

◈ DESCRIPTION

The IEI runs on a semester calendar with 16-week semesters in the fall and spring and an 8-week semester in the summer. Students receive 20 hours per week of core curriculum instruction; the program is divided into five proficiency levels. Students are placed into levels on the basis of the IEI English Placement Test. At the basic, low intermediate, and intermediate levels of the institute, the core curriculum consists of reading, grammar, listening/speaking and oral communication (with composition also at the intermediate level). At the high intermediate and advanced levels of the program, students choose between an academic and a general track for their Monday/Wednesday/Friday (MWF) classes and choose two Tuesday/Thursday (TTh) classes out of five possibilities. The MWF academic track consists of a 6-hour reading/writing course with an emphasis on academic tasks, such as summarizing, critiquing and source-based writing, and a 6-hour listening/speaking course with an emphasis on listening to academic lectures, note-taking and oral presentation projects (see Table 1). The general track consists of a 6-hour general reading/writing class and a 6-hour oral communication class with an emphasis on communication skills, such as conversation strategies. The five 4-hour classes offered for TTh choices are English Language Through Literature, English Structure for Academic Purposes, English Language Through Current Events, Oral Communication in English (for students who have chosen the academic track on MWF) and English Language Through Computers and the Internet (ELCI). ELCI is discussed below.

TABLE 1. SAMPLE CURRICULUM CHOICES

Curriculum Choices for IEI Advanced and High Intermediate Students

Each course is held in 2-hour sessions each day it meets.

MWF options (students choose one pair)	TTh options (students choose two classes)
Academic track	
• reading/writing (academic) and listening/speaking	• oral communication (academic)
	• current events
General track	• structure
• reading/writing (general) and oral communication	• literature
	• ELCI (computer/Internet)

Components

Each core course, such as Reading/Writing or Literature, constitutes a component, led by one of the full-time IEI teachers. The component leader trains and supervises teaching assistants within the component through weekly meetings and regular classroom observations, supervises materials development projects, and generally serves as the primary resource person for teachers in the component. Other component resources vary, but generally include a handbook and files of materials from previous semesters (both on line and on paper). Although each component is carefully structured and coordinated, and the component leader is responsible for selecting the textbooks or other course materials for each level, very little course content or methodology is actually mandated from the top down. This leaves considerable freedom to the individual teachers to plan their syllabi, daily lesson plans, and other materials and methods, and allows the MATESL students the opportunity to apply in the IEI classroom what they are learning in their MA classes.

Sections

In addition to the components, a second administrative unit is made up of the teachers who teach the same group of students across one proficiency level. These teachers and their students constitute a section. At the basic, low intermediate, and intermediate levels, there are four or five teachers (i.e., structure, listening/speaking, oral communication, reading and—at the intermediate level—composition) in each section, so there is a great deal of collaboration and coordination among them with regard to lesson planning, dealing with student issues and group dynamics, and outside activities. Section leaders, mainly from the full-time teaching staff, provide coordination at the class level and serve as liaisons with their respective classes for necessary announcements and other administrative duties. The open choice of Tuesday/Thursday classes at the high intermediate and advanced levels means that consistent groups of students and teachers occur only in the Monday/Wednesday/Friday classes, so coordinated activities in and out of class are less frequent among teachers at the higher levels.

Electives

In addition to the core courses, IEI students have the option of signing up for elective courses, the majority of which are proposed, designed, and taught by teaching assistants under the supervision of the full-time teaching staff. Apart from a TOEFL preparation elective and pronunciation tutorials, electives vary from semester to semester but have included classes such as English Through Acting, Web Page Design or other computer literacy electives, American Slang, and even English Through Bowling. These courses offer IEI students opportunities for additional development of English skills through interaction in areas of interest to them, and they provide teaching assistants opportunities for creative design and implementation of their own courses.

DISTINGUISHING FEATURES

Among the factors that have helped to distinguish the IEI's use of technology in its curriculum are

- the administrative support and vision for the use of technology
- the need for technology to find its place in the largely decentralized curriculum
- an emphasis on using computers to foster meaningful communication
- the benefits and challenges of working with graduate teaching assistants as a large part of the teaching staff

These features are not necessarily unique to the IEI, but they have certainly had a significant effect in determining the direction our use of technology has taken.

Technology Strategies

First, DEIL and IEI administrators have consistently placed a high priority on the strategic use of technology to enhance instruction. This has been reflected financially through a commitment to outfitting the lab with up-to-date equipment and software and providing adequate resources to the teaching staff to facilitate their use of the lab for instructional purposes, but most of all through the hiring and support of CALL resource personnel. From the initial planning stages of LinguaCenter, DEIL/IEI has been committed to providing careful oversight of the lab and technical assistance to teachers. The structure of this support has developed over the years and grown as the use of the lab and its challenges have increased so that this semester, for example, there are the equivalent of 3.3 full-time employees working to support the use of instructional technology in DEIL/IEI in one capacity or another (specific jobs are mentioned above in the discussion of the context of the program). In addition, the administration has diligently supported, through funding as well as encouragement, the involvement of the CALL coordinator and others in training events and professional conferences as participants and as presenters. This degree of technical support is critical to the program's success. One does not need to search far to find reports of programs with lots of good equipment but little or no idea of what to do with it to enhance language instruction. The commitment of DEIL/IEI to hiring and cultivating CALL support personnel is one of the most significant reasons for its current recognition as a leader in the use of instructional technology.

Decentralization

The second distinguishing feature, the largely decentralized approach to the curriculum in the IEI, has also had a major impact on the institute's approach to the use of technology in the program. As a result of the IEI's commitment to allowing a fair degree of freedom to teachers in planning their classes, we have not invested large sums of money in extensive commercial ESL multimedia software packages. For us, large amounts of money spent on big instructional packages with limited (or no) flexibility for teacher modification would, in the end, either result in unused software or software driving the curriculum rather than vice versa. The approach that has worked well for us has been to

- purchase small, focused and flexible ESL software packages as needed, in consultation with relevant component leaders and teachers;
- develop our own materials to suit our curriculum, teaching styles and pedagogical priorities; and
- make extensive creative use of standard (i.e., non-ESL specific) tools and resources such as word-processing, e-mail, and the World Wide Web.

Each of these points will be considered in turn.

Teacher-Driven Technology Purchases

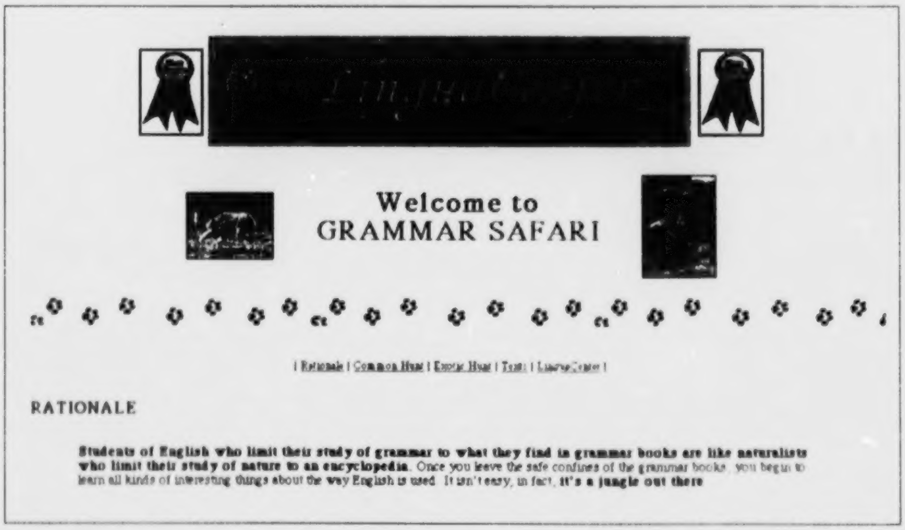
When the computers for LinguaCenter were purchased, a graduate research assistant was hired to provide technical support of the lab and to research and build a database of available ESL software. In spite of his diligence in researching what was available and requesting demo diskettes and trial CD-ROMs, we found very little ESL software that suited our program. This has generally continued to be the case. Indeed, since the beginning of LinguaCenter in 1992, we have purchased only three ESL-specific software programs. These have each been relatively small programs focused on specific skills such as listening for details in a brief utterance, or developing reading comprehension. This approach to purchasing commercial software has allowed us to use our resources effectively to "scratch where there's been an itch"—to meet some of our existing needs or enhance our instructional resources without allowing the technology to dictate the direction of the curriculum. All three purchases were made relatively early on in the history of the lab and helped provide resources that teachers felt comfortable with at that point. This is not to say that we would no longer purchase commercial ESL-specific software, but we are very selective in the process. In contrast to the early purchases, which were made with relatively little input from teachers in the relevant components, all potential software purchases are now carefully evaluated and explored with the appropriate component staff. It is, of course, proverbial wisdom in CALL that the greatest success in the implementation of new software comes from the involvement of the relevant teaching staff in its evaluation. Our experience has borne this out.

Software and Web Development

In contrast to purchasing commercial software, developing our own software has generally proven much more effective in gaining control over content, methodology, and design. Our goal has been to create templates with a pedagogical design that teachers find useful, and with the flexibility to allow easy content modification and the continuing development of new lessons. Some of our earliest efforts met with relatively limited success in terms of actual use, due again to the limited involvement of the teachers who were the best candidates to use the software with their classes. Our most useful efforts have been carried out as collaborations between the CALL coordinator or other LinguaCenter staff and component leaders and teachers. Examples of this type of software include HyperCard (1997) templates to guide student comprehension of digitized video segments, and the Web site *Interactive Listening With Comprehension Practice* (1996). Three joint projects are underway between the CALL coordinator and the listening/speaking component staff to develop new materials based on variations of the existing templates. These collaborative refinements in software implementation will better reflect the pedagogical approach being used in the listening/speaking component and so provide a more finely honed tool for the teachers. The future is bright for this type of collaborative software development: The increasing computer literacy of incoming MATESL students and their eagerness to gain some CALL experience before hitting the job market make them highly motivated for projects such as this.

Using Existing Software for New Purposes

In addition to developing our own software, we have found it useful to develop our own activities and approaches—beneficial ways of using existing software resources (e.g., the World Wide Web or multimedia encyclopedia CD-ROMs) or applications (e.g., a word processor or a simple strategy game) to enhance the learning experience of our students. A prime example of this is the Web site *Grammar Safari* (1995; see Figure 1), an approach to using the Web as a huge searchable concordance of authentic English for student research into actual uses of grammatical structures or vocabulary items in context. Students use existing resources (e.g., the Find capabilities of their favorite browser or the Search facilities of their favorite search



Welcome to
GRAMMAR SAFARI

| Rationale | Common Hunt | Exotic Hunt | Tests | LinguaCenter |

RATIONALE

Students of English who limit their study of grammar to what they find in grammar books are like naturalists who limit their study of nature to an encyclopedia. Once you leave the safe confines of the grammar books, you begin to learn all kinds of interesting things about the way English is used. It isn't easy, in fact, **it's a jungle out there**

FIGURE 1. *Grammar Safari*. Copyright ©1995 by the Board of Trustees of the University of Illinois. All rights reserved. Reproduced by permission of Douglas G. Mills.

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engine) and the millions of Web pages on the Internet in order to look at how grammar and vocabulary are really used, as opposed to the relatively tame and contrived examples found in their textbooks.

Similarly, a collaborative effort is underway between the composition and reading/writing components and the CALL coordinator to explore how some of the advanced annotation and revision features of a popular powerful word processor can be used in LinguaCenter to enhance student interaction in collaborative writing and peer review activities. In neither of these examples are we creating new software; we are simply formulating an approach to using existing resources and capabilities as another tool available to our teachers. Furthermore, involving students in the use of non-ESL-specific applications and resources has the added attraction of providing them with training in skills they may need outside of their ESL studies. Learning to use a grammar drill program is of limited value beyond the study of English or even beyond the time the student has access to a particular computer lab; learning to search the World Wide Web as a tool for learning about grammar will be useful not only for further English study but for many other purposes as well.

Communicative Focus

A third distinguishing feature can be found in the focus of our instructional computing. In all of our in-house development projects, whether software, activities, or approaches, we find that we are primarily drawn to using the computer to provide the *content*, the *context*, or the *means* of meaningful communication.

Content

As the provider of content for meaningful communication, the computer is a source of information to fuel classroom discussions, presentations and papers. When we first began thinking in these terms, computers most often provided content for meaningful communication through the use of CD-ROMs, such as multimedia encyclopedias or other content-focused educational packages. Now, the World Wide Web is unsurpassed in terms of the amount and variety of information available. Doing research in the lab for an oral presentation, group project, or written report is, in itself, a meaningful task of sufficient complexity to demand significant authentic communication between partners or among group members as they discuss search strategies, evaluate sources, and synthesize their results. This kind of research demands the development of skills that will be extremely useful in the future for most of our students. In addition, much of the software and many of the activities we have developed rely on the computer, in particular the World Wide Web, as a rich source of authentic materials in English. *Grammar Safari* (1995) and *Interactive Listening* (1996) are two examples of the IEI using the Web for authentic content.

Context

In considering the computer as the context for meaningful communication, we are thinking first of our content-based IEI classes. Here, practicing and improving English communication skills takes place in the context of learning and practicing computer and Internet skills. As mentioned above, our curriculum allows our MATESL teaching assistants to propose, design, and implement their own elective courses for our students (any course offering depends on sufficient enrollment), and this freedom has resulted in a series of computer literacy electives ranging from basic computer skills to Java and Perl programming classes.

After teaching a series of computer literacy electives, one teaching assistant proposed a core course along the same lines. Thus was born our English Language Through Computers and the Internet (ELCI) component (see the *ELCI Showcase*, 1998). As with all other IEI components, ELCI teachers have a fair amount of latitude as to just how their classes are implemented and exactly which computer skills they will teach, but typically an ELCI class will cover various approaches to e-mail (with their pros and cons), advanced word-processing skills, possibly presentation and/or spreadsheet software, Web search strategies, basic and advanced hypertext markup language (HTML) for creating Web pages, usually some graphics, and maybe some JavaScript and digital sound or video. In addition to the development of skills for working with these applications and resources, students engage in on-line readings and discussion groups regarding various aspects of the social impact of the Internet and maintain an e-mail journal correspondence with their teachers. Their semester of work culminates in the ELCI Open House, where they present their final group or individual projects to teachers, other IEI students, and the public. (See the *ELCI Showcase* on the DEIL Web site, 1998, for examples of final projects as well as some teacher-produced activities.)

The computer also serves as the context for meaningful communication in cases where it provides the framework for a task to be carried out, such as with simulations. We have used commercial murder-mystery software, such as Sherlock Holmes: Consulting Detective (1992), and simple freeware strategy games, Web-based or otherwise. In the case of the murder mystery, the requirements of the game itself will most likely require some meaningful comprehension of English in both written and spoken modes. When you add to the language element of the game itself the dynamics of working in a group (a necessity to get the most from this type of activity), there is great potential for enjoyable language practice. In the case of a simple strategy game, such as Sokoban (Lindhurst, 1997; available for all platforms and the Web; see Figure 2), much of the communicative practice depends on the careful planning of the activity. Through the use of ground rules, such as enforced turn taking at the keyboard (i.e., if it's not your turn, you may not touch the keyboard or mouse; you can only give advice in English) and some motivating competition, such activities can provide entertaining, focused practice. Also, with input from the oral communication component, the CALL coordinator has developed *Imagination Voyages* (1996), a Web-based travel planning simulation designed to stimulate discussion within groups of two to five students (see Figure 3).

Means

Web-based ELCI student projects are one example of the computer as the means of meaningful communication. The World Wide Web provides the vehicle for the students to communicate their ideas to the world. Such projects are not limited to the ELCI component, however. Students have created Web projects across the five levels of the IEI and in various components (or often in a cross-component collaboration at a given proficiency level). The *DEIL/IEI Class Resource & Projects Pages* (1999) offers links to sample student Web projects from components other than ELCI. Whereas in some of these cases the pages were created completely by the IEI students, in other cases the students provided the content and the teachers published the pages on the

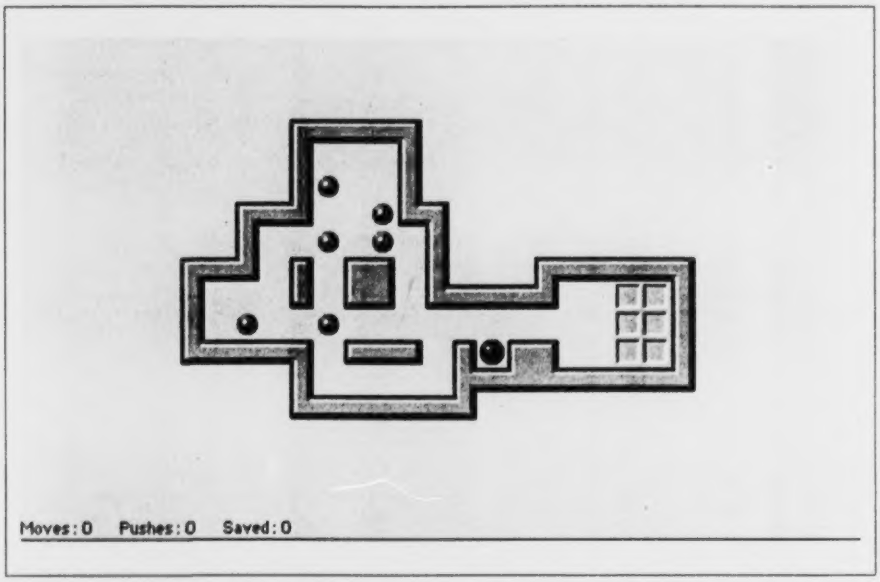
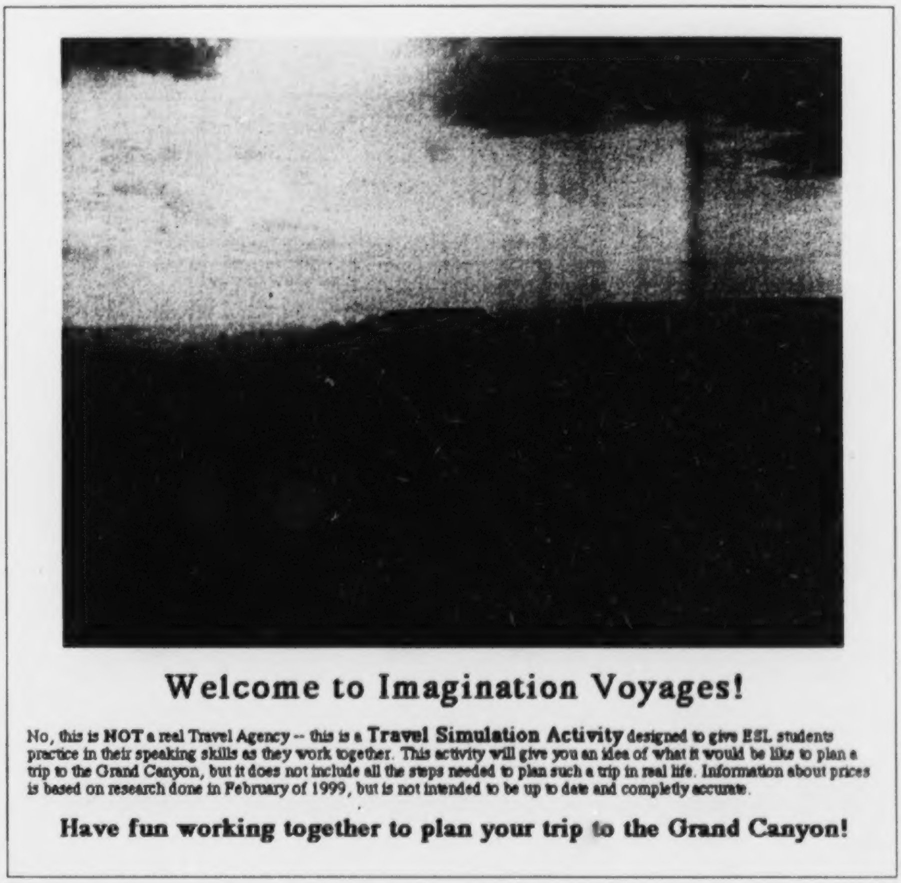


FIGURE 2. Sokoban for Macintosh (Lindhurst, 1997), Freeware Strategy Game. Reproduced by permission of Scott Lindhurst.

Web. In fact, the IEI's *ExChange ESL Magazine* project (1999) provides an editorial review process followed by publication on the Web, not only for IEI students, but also for ESL students worldwide (see Figure 4). Publishing a project on the World Wide Web adds a completely new dimension to student projects in the form of a vastly expanded audience. Instead of communicating ideas just to the teacher and possibly a few classmates, a project on the Web may be viewed by people from all over the world. This increases student motivation in the areas of accuracy, creativity and sensitivity. In one project a group of students dealing with their chosen topic, "Eating Habits in America," struggled long and hard with the best ways to communicate their impression that Americans tend to be more obese than people in their own country without being offensive to Americans who might visit their site. Being on the Web forced them to deal with the somewhat subtle issues of tactfulness and acceptable terminology that they likely would not have been motivated to explore had they simply been writing a paper for their teacher and classmates.

We have made use of other means of computer-based communication besides the Web. E-mail journal assignments and discussion groups have been used with some frequency through the years in the IEI, and some teachers have arranged for their students to participate in collaborative projects with classes at other schools through key pal arrangements. One semester, in fact, the IEI gave an extra assistantship to one of our MATESL grad students with experience in this area to help support other teachers interested in trying it with their classes. The results were not overly encouraging, unfortunately. Key pal projects definitely present their own challenges; however, this past semester we had an encouraging exchange between students in one of our ELCI classes and the class of one of our former teaching assistants (in fact, our former key pal coordinator) now teaching at the University of



Welcome to Imagination Voyages!

No, this is **NOT** a real Travel Agency -- this is a **Travel Simulation Activity** designed to give ESL students practice in their speaking skills as they work together. This activity will give you an idea of what it would be like to plan a trip to the Grand Canyon, but it does not include all the steps needed to plan such a trip in real life. Information about prices is based on research done in February of 1999, but is not intended to be up to date and completly accurate.

Have fun working together to plan your trip to the Grand Canyon!

FIGURE 3. *Imagination Voyages*, a Web-Based Travel Planning Simulation Project. Copyright ©1996–1998 by the Board of Trustees of the University of Illinois. All rights reserved. Reproduced by permission of Douglas G. Mills.

California in Santa Barbara. This exchange involved e-mailing comments and critiques of each other's Web-based projects and culminated in a videoconference at the end of the project. One lesson learned is the advantage of knowing the other participating instructor personally.

Graduate Teaching Assistants

The fourth distinguishing feature of our IEI, the fact that many of our teachers are MATESL graduate assistants, is a major asset to the program and also a positive contributing factor to the IEI's success in the use of technology. Each successive generation of graduate assistants teaching in the IEI brings with it an increased base of technological expertise and experience as a starting point and ever increasing enthusiasm for the instructional use of technology. Add to this expertise and enthusiasm the growing integration of technology into the courses they are taking as graduate students and the expanding graduate course offerings in instructional

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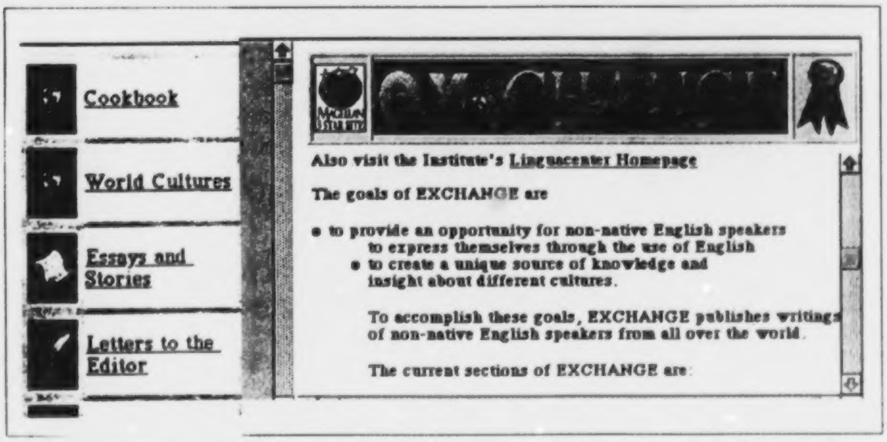


Also visit the Institute's Linguacenter Homepage

The goals of EXCHANGE are

- to provide an opportunity for non-native English speakers to express themselves through the use of English
- to create a unique source of knowledge and insight about different cultures.

To accomplish these goals, EXCHANGE publishes writings of non-native English speakers from all over the world.

The current sections of EXCHANGE are:

Figure 4. *ExChange ESL Magazine*, a Web-Based Project Open to Students Around the World. Copyright ©1995–1998 by the Board of Trustees of the University of Illinois. All rights reserved. Reproduced by permission of Douglas G. Mills.

technologies, and it is easy to imagine that the IEI's use of technology would be almost inevitable even if it were not strongly supported and encouraged at all levels of the administration.

As with the other elements of the IEI's curriculum, there is a great deal of freedom for individual teachers to develop their own approaches to the use of computers to support their teaching. At the same time, as is the case throughout the IEI, this freedom falls far short of being a free-for-all. In spite of the enthusiasm, energy, and technological expertise that the graduate students bring with them to the task, relatively few have had significant experience in the specific application of computer technology to language learning prior to coming to teach in the IEI. One of the essential roles of the CALL coordinator, therefore, is to serve as a consultant to teachers formulating ideas for the instructional use of LinguaCenter with their classes. This consultancy takes on many different forms, such as suggesting profitable directions for exploration, brainstorming with teachers to help refine and improve proposed class activities in the lab, developing custom software or instructional Web pages, providing guidance concerning classroom management in the computer lab environment, or training in the use of lab resources. The importance of the role of the CALL coordinator is magnified by the fact that graduate teaching assistants come and go. The CALL coordinator provides an institutional memory of how instructional technologies have been used in the past and passes that information on as a starting point to incoming teachers. This passing on of institutional memory takes place mostly at the IEI component level in conjunction with the full-time component leaders. Because of the turnover of graduate teaching assistants, the projects and approaches with the most longevity are those that are coordinated or developed at the component level.

Other forms of support and encouragement of graduate student initiatives in the area of CALL are the specific assistantships to support CALL in the IEI (discussed above) and the opportunity to do independent studies in materials development or lab management as part of the MATESL coursework. Although this latter option is only just beginning to be adequately developed, an independent study in the summer of 1997 resulted in a multimedia project designed to guide upper level IEI students' interaction with a digitized academic lecture. We anticipate that eventually the MATESL curriculum will include a specialization option in CALL.

PRACTICAL IDEAS

Among the lessons that could be gleaned from the IEI's use of instructional technology is the necessity of administrative encouragement and commitment, specialized CALL support in collaboration with classroom teacher interests and initiatives, and creativity in exploring possible pedagogical uses of computers.

Gain Administrative Support

A major factor in the success of the IEI's use of educational technology is the administration's commitment to providing good equipment not only in the lab but also in teacher offices and workrooms. Even more essential is the consistent commitment to providing support personnel to oversee, assist in, train teachers for, and develop appropriate uses of technology. Without administrative support for CALL, the implementation of meaningful technology-enhanced instruction is not likely to have a curriculum-wide impact; it is far more likely to remain the domain of just a few interested teachers. Of course, one or more interested teachers could be the catalyst for helping things to happen, but this too would be more likely to take place with administrative recognition of their efforts in terms of release time and support for training and professionalization in CALL.

Enlist Teacher Collaboration

The IEI's focus on instructional technology thrives because it encourages individual teachers and especially groups of teachers (at the component level in particular) to take the initiative in determining how they are going to use the technology to enhance the courses they teach. A powerful synergism takes place when the technology experts and the content experts, especially those who will be using the technology with their classes, put their heads together. This is perhaps particularly true when the formula includes the energy of enthusiastic graduate students. It should be noted that appropriate CALL support is pedagogical, not merely technical. Simply having a resource person from the campus computing center to troubleshoot computer or network problems is rarely adequate.

Develop Creative Pedagogy

Finally, the example of the use of technology in the IEI should, for some, lead to an expanded vision of CALL. Although there is in the IEI's approach to CALL a legitimate place for computer-based mechanical practice (e.g., for grammatical accuracy) and we do some of that, most of our use of computers is focused on fueling or eliciting meaningful communication for the purpose of building and practicing language skills. We view the computer as a resource that provides the content, context, and means for authentic communication. Furthermore, although we do use and have developed ESL-specific applications, well over half of the time we use standard productivity software, such as Web browsers, HTML editors, and word processors to access authentic information and to produce authentic communication in teacher-designed activities, typically involving collaborative group work. Even on the Web, the majority of our students' time is not spent at ESL-specific sites but in interacting with English as it is used in the real world. As noted above, this approach has the further advantage of training students in the use of software and resources they will likely need to use again, in circumstances beyond their English studies. Our functional definition of CALL might be broadly stated as "any use of computer technology that enhances or stimulates our students' use of English," whether through interactions with the computer itself or interactions with others on- or off-line.

CONCLUSION

The Intensive English Institute at the University of Illinois, Urbana-Champaign, has enjoyed success in its use of computer technology and resources for instruction, largely as a result of administrative vision and support, the collaborative efforts of CALL specialists with enthusiastic classroom instructors, and creativity in pursuing approaches to computer technology that help students refine and practice their ability to communicate effectively in English. Additional major contributing factors to this dynamic mix have been the decentralized structure of the IEI curriculum, the energy and enthusiasm of MATESL graduate teaching assistants employed by the IEI, and the specialized pedagogical expertise of the full-time component leaders.

CONTRIBUTOR

Douglas G. Mills has an MATESL degree from DEIL and is the CALL coordinator and Webmaster for DEIL/IEI. He enjoys developing interactive Web-based applications to guide student comprehension of authentic materials and exploring constructive pedagogical uses of the latest Web technologies. He also enjoys spending time with his wife and children.

CHAPTER 10

Teaching Writing With Web Projects: Famous Personages in Japan

Thomas N. Robb

INTRODUCTION

Famous Personages in Japan (Robb, 1999) is a Web-based collection of almost 300 essays on famous people in contemporary Japan, mostly written by students in my courses during the past 3 years. The writing collection is ongoing, with more pages added each term. This undertaking might be considered a bit unusual because it did not start with a desire to do a project. Rather, *Famous Personages in Japan* came about because, as a writing instructor, I wanted my students to compose something more than the traditional essay that is written, revised, revised again, turned in, and then forgotten.

Having taught writing courses at my university for more than 10 years, I wanted to break out of this cycle. I selfishly wanted the time I spent providing feedback on students' work to yield something more permanent. *Famous Personages* was the answer. The choice of topic grew out of a perceived personal need: to learn more about the culture that I have lived in for 25 years. Despite the fact that I speak fluent Japanese, I found myself well out of the loop, not knowing who the current heroes were on the Japanese cultural scene. As is borne out by the site's popularity, I had rightly assumed that there would also be others without easy access to this type of information.

CONTEXT

The student writers in this project are among the English majors at Kyoto Sangyo University in the Faculty of Foreign Languages. Kyoto Sangyo has more than 200 English majors in each cohort, taking courses in sections of roughly 30 students. Classes meet for 90 minutes once a week. Many of the courses require little homework or outside preparation. Owing to the examination system and high school classes that concentrate on grammar, intensive reading, and translation, most students enter the university without ever having written a sentence of their own creation.

Most of the profiles were written by students in my sophomore writing class, one of four writing classes they take during their 4-year academic sojourn. The Web pages that the students produced were thus part of their course work. They received grades on the assignments based on the content and quality of their work.

Like most Japanese students, these learners have rather poor control over English syntax and a rather small active vocabulary. These weaknesses, however, were not an impediment to this particular project. First, the structure of biographical profiles is basically chronological, a rhetorical style that is relatively straightforward. Second, there are many good models for this type of writing, including the ever-increasing number of Web pages in the project itself. Each student reports on three people, creating a biographical Web page for each, a task that provides considerable practice in writing in the same genre and style.

For the past 5 years, all of the sophomore writing sections in my department have been held in one of the school's Macintosh computer laboratories. The machines were already equipped with Netscape Navigator, and students had access to the lab after hours if they needed extra time to complete their pages.

My university is fortunate to have excellent computer facilities, being one of the first in Japan to set up a Web server and to allow both teachers and students free access to it. Having already completed another project with my seminar class, the *Kyoto Restaurant Project* (Robb, 1997), I realized that the project was feasible as long as I did not require too much technical expertise from the students, and instead allowed them to concentrate on the content and language aspects of the project.

◈ DESCRIPTION

The Project

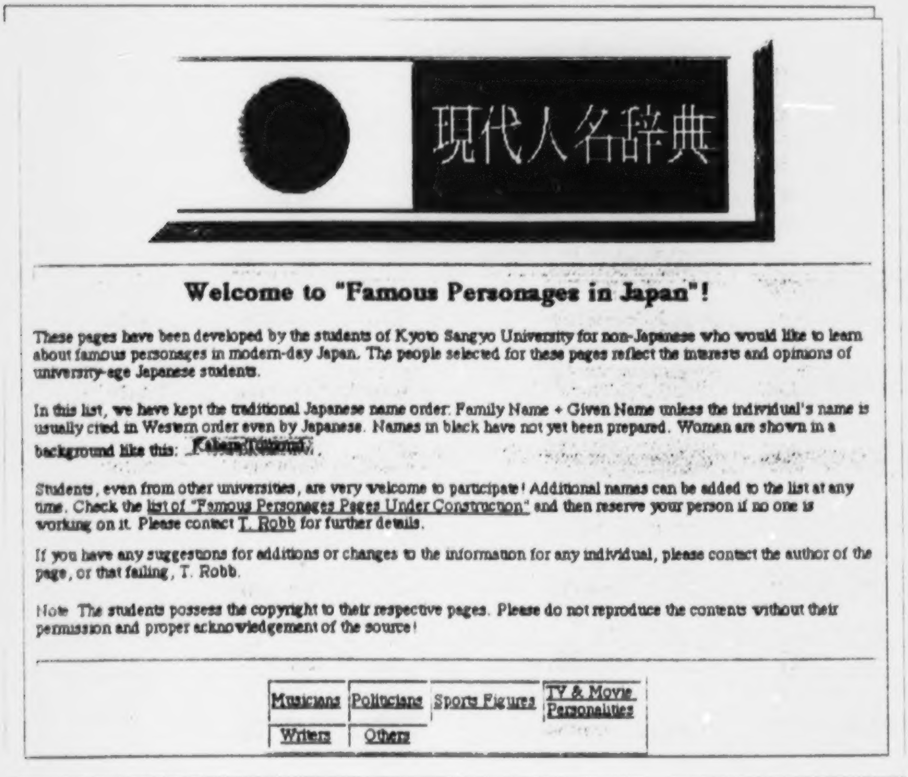
The project consists of a main page, *Famous Personages in Japan* (Robb, 1999), which lists the names of all people represented, suitably categorized (see Figure 1). Clicking on a name brings up an individual entry with links to other entries where possible. Each entry has the following elements:

- name, with date and place of birth
- the biographical extract itself
- source of information
- author of the page, with clickable e-mail address
- name of another student who vouches for the accuracy and completeness of the data
- date of submission and revision

Currently, very few of the Web pages include a picture of the famous individual because of the difficulty of obtaining proper copyright permission. Because this is a university site, I do not believe that we can simply lift pictures at will, as often appears to be the case with personal pages.

The Production Process

The project starts with the class brainstorming a list of famous people, which we then categorize according to type. I produced a model World Wide Web page which all of the students can view in the lab so that they will have an idea of what their goal is. I also produce a mock-up main page for the class, listing the names that they had brainstormed, but with no links in place.



Welcome to "Famous Personages in Japan"!

These pages have been developed by the students of Kyoto Sangyo University for non-Japanese who would like to learn about famous personages in modern-day Japan. The people selected for these pages reflect the interests and opinions of university-age Japanese students.

In this list, we have kept the traditional Japanese name order: Family Name + Given Name unless the individual's name is usually cited in Western order even by Japanese. Names in black have not yet been prepared. Women are shown in a background like this: [illegible].

Students, even from other universities, are very welcome to participate! Additional names can be added to the list at any time. Check the list of "Famous Personages Pages Under Construction" and then reserve your person if no one is working on it. Please contact T. Robb for further details.

If you have any suggestions for additions or changes to the information for any individual, please contact the author of the page, or that failing, T. Robb.

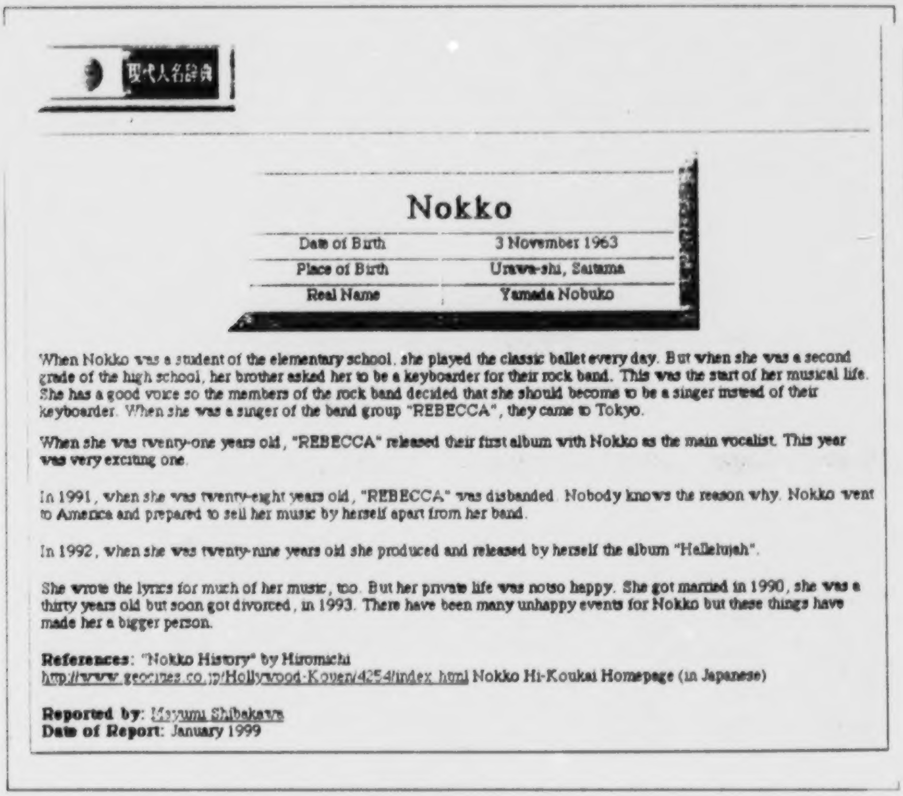
Note The students possess the copyright to their respective pages. Please do not reproduce the contents without their permission and proper acknowledgement of the source!

FIGURE 1. Home Page of *Famous Personages in Japan* (Robb, 1999). Reprinted by permission of Thomas N. Robb.

Each student then chooses three people to write about. They are encouraged to write all three essays concurrently, bringing them to me for comments whenever a draft is ready. The students generally use computers for all but the very first draft. I try to make my first round of comments mainly substantive, but I do point out all local errors (or hint at them) in later drafts because the final versions have to be of "publishable" quality. I do not aim for perfect, polished work; the essays still retain much of the flavor of EFL student writing, as seen in Figure 2.

Once an article is completed, the students take a hypertext markup language (HTML) template that I have produced and simply substitute their own information for that in the template. They are taught to create their HTML on normal word processors, saving their work and viewing it with their browsers, alternating back and forth between them, until they are satisfied with the result. Even without a template, students can use the View Page Source option, available on most browsers, to copy an existing page, paste the HTML into a word processing document and then substitute their information for that on the copied page.

Next, students call on me to view the Web page, and if I find it acceptable, they submit it to me via a special drop folder on our network. (Students receive a full explanation of the process in class and on line.) I then upload the file to our server



Nokko

Date of Birth	3 November 1963
Place of Birth	Urawa-shi, Saitama
Real Name	Yamada Nobuko

When Nokko was a student of the elementary school, she played the classic ballet every day. But when she was a second grade of the high school, her brother asked her to be a keyboarder for their rock band. This was the start of her musical life. She has a good voice so the members of the rock band decided that she should become to be a singer instead of their keyboarder. When she was a singer of the band group "REBECCA", they came to Tokyo.

When she was twenty-one years old, "REBECCA" released their first album with Nokko as the main vocalist. This year was very exciting one.

In 1991, when she was twenty-eight years old, "REBECCA" was disbanded. Nobody knows the reason why. Nokko went to America and prepared to sell her music by herself apart from her band.

In 1992, when she was twenty-nine years old she produced and released by herself the album "Hallelujah".

She wrote the lyrics for much of her music, too. But her private life was notso happy. She got married in 1990, she was a thirty years old but soon got divorced, in 1993. There have been many unhappy events for Nokko but these things have made her a bigger person.

References: "Nokko History" by Hiromichi
http://www.geocities.co.jp/Hollywood-Kouen/4254/index.html Nokko Hi-Koukai Homepage (in Japanese)

Reported by: Mayumi Shibakawa
Date of Report: January 1999

FIGURE 2. *Nokko* (Shibakawa, 1999). Sample Student Entry From *Famous Personages* Project. Reprinted by permission of Mayumi Shibakawa.

and install the link to it on the main page. The technical and formal aspects of the project are the teacher's responsibility, leaving students free to focus on the content and writing.

Once a sufficient number of Web pages are completed, I register the URL of the main page with several of the major search engines on the Internet, so that learners around the world will be able to find the pages. I also make an announcement on both *TESLCA-L* (a branch of *TESL-L*)[1] and *NETEACH-L*[2], the main electronic lists for EFL/ESL teachers. The expectation is that other teachers will pass this information along to their own students, who will in turn visit the page and write to the creator.

Successive composition classes have added more biographies, and a number of teachers from other schools in Japan have contributed Web pages written by their own students using the same format.

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[1] *TESL-L* [Electronic list]. To subscribe, send the message "sub TESL-L yourfirstname yourlastname" to listserv@cunyvm.cuny.edu. Example: sub TESL-L John Wayne. (Information available by e-mail to teslhelp@cunyvm.cuny.edu)

[2] *NETEACH-L* [Electronic list]. To subscribe send the message "sub NETEACH-L yourfirstname yourlastname" to listproc@ukans.edu. (Available from http://www.ilc.cuhk.edu.hk/english/neteach/main.html)

DISTINGUISHING FEATURES

Theory and Practice

Earlier this year, after classes had ended for the term, I walked into one of our computer labs and saw one of my composition students from 2 years earlier working on her e-mail. When I asked what she was writing, it turned out to be a response to someone who had read one of her *Famous Personages* pages. Two years later, she was still receiving and responding to messages generated by the project.

This ongoing correspondence, extending beyond the course itself, is one of the major benefits of the project and one that I had not anticipated. The pages themselves create a slow but steady flow of unsolicited e-mail from all over the world. Particularly for students in an isolated EFL context, this opportunity to put their theoretical knowledge of English to practical use appears to be extremely motivating.

When the *Famous Personages* pages were first launched, I used to bring in a listing from our server's log just to show students how many hits there were on our pages—about 250 a day—and from how many countries. This record, along with the personal replies they started to receive, soon convinced them of the worth of the project. In the questionnaire at the end of the term, the project was the aspect most highly valued in the course.

Lasting Content Value

The other major outcome was the one that I originally had aimed for. The students were indeed writing material of lasting value, and I was becoming familiar with a host of modern Japanese personalities. Many class projects on the Web are posted for a semester or two and then disappear. The longevity of this project, sustained by its continual updating, is one of its most distinctive features.

Projects such as *Famous Personages* in Japan can quickly become dated. One solution I have found to this problem is to have successive generations of classes review existing projects. The students are each assigned a range of pages to check for accuracy. They each submit a report on which pages require updated information, and then I have them retrieve the page (using Get Page Source, in Netscape Navigator, 1997), update it and then submit it to me for replacement on the site. This approach possesses the additional advantage of familiarizing the students with the layout of the project and the concept of HTML, in preparation for their own, different project later.

Authentic Communication

Another advantage of the project is that it necessitates authentic communication in English between students and teacher. In this sense, it is a content course because the focus of much of the work is on discussing aspects of the project rather than merely focusing on English itself.

PRACTICAL IDEAS

Choose a Unified Theme

The stepping off point for any project is deciding on a good theme. Allowing each of your students to develop a page, and then tying them together with a main page does not qualify as a project. There needs to be a central theme, one that all students can be enthusiastic about and contribute to. No one except the proud students, teachers, and parents will look at a site entitled *Alice Smith's Class Projects,* but a site entitled *Embarrassing Moments,* for example, would certainly attract outside interest.

Take a minute to think about what information could be made available by your students that would be valued by a specific audience. In the case of the *Famous Personages* project, the audience was people who wanted to know more about Japanese personalities. As with any writing, a clear idea of the audience is essential.

Here are some possible topics:

- A Funny Thing That Happened to Me
- unusual customs (if you have a multicultural class)
- an English version of your school's Web site (if you are in a non-English speaking area)
- cultural sites in your area
- a survey of restaurants in your area
- a guide to amusements/recreational facilities in your area with hours, costs, and other essential information
- a collection of essays on aspects of your town, as perceived through the eyes of your students
- Easy-to-Cook Ethnic Recipes (see Gaer, 1997, *Email Projects Home Page,* for an example)
- the history of your area, with each team of students describing a different era
- your local ecology (see Isbell & Reinhardt, Chapter 4, in this volume)

There is no need to start a Web site from scratch. As the old saying goes, "Imitation is the sincerest form of flattery." If you find a good project on the Internet that happens to be regionally specific, you can have your students do a similar topic based on your own region or culture. With the permission of the original Web site's manager, you might even be able to use the same page layouts, thus simplifying your own project tremendously. I would be thrilled if someone from China or Brazil wrote asking for assistance in making a *Famous Personages in xxxx* site for another part of the world.

Set Feasible Goals

Web projects do not have to take a long time, but generally they do take longer than you expect. In some unfortunate cases, students work very hard to create great pages, but before they can see the final results posted on a Web site, the term finishes and they disperse to the four winds. It is thus essential that the project be completed while the students are still around to view it in its entirety. You need to develop a time line for completion and stick to it. Here are the essential stages:

- determining the theme
- creating a mock-up of the main page and templates for each type of ancillary page
- gathering information
- editing information
- finalizing page design
- producing the final pages
- loading the pages onto the server
- advertising their availability

Each of the above steps can be performed by either the students or the teacher, depending on their respective talents, available time, and the amount of outside help required. Keeping to the schedule may require you to spend some unplanned hours to wrap up loose ends. If you do not have any leeway in your schedule, a Web project may not be your piece of cake. Do not count on your institution to bail you out if you get over your head. A good rule of thumb when estimating the development time for any kind of computer project is to take your largest estimate and double it. Count on unexpected delays; they will surely come.

One clever way to safeguard against disappointment is to put up a small, but complete, working model as early as possible. Most projects are incremental in nature. As long a there is a homepage and a number of subsidiary pages, the site can look complete even though there are more pages in the works. It is then a simple task to add more links to the main page as more elements come to completion.

In every class there will be students who drag their feet. Make it clear to them that their contributions will not be put up on the Web site unless they meet whatever standards you have set for accuracy and completeness.

Be Careful to Cite Sources

The inclusion of a "References" line at the bottom of each page provides a way for the students to cite their sources, in keeping with proper academic practice. In my students' case, most of these references were in Japanese, and much of the material that they created was a translation and condensation of material available only in that language. Recently however, with the proliferation of the Web, some other English language sources have become available. It is thus even more important that the students clearly cite all sources. Material from elsewhere on the Internet can be not only cited, but also hot-linked.

If your topic lends itself to copying from easily available sources, be suspicious of submitted work that looks too good. As with any ESL writing assignment, it is best to use a process approach in which you, as instructor, see progressively improving drafts. This way you can be sure that the work is the student's own. In fact, I am starting to wonder how much my site is serving as a source for other students' compositions. Naturally, there is no way that I can control potential plagiarism, apart from a warning on the top of the main page. Teachers, however, can always use a search engine to find the original copy of a suspicious assignment by inputting a key phrase and selecting the Exact Phrase Option offered by many search engines.

Maintain Pages

Unlike a work published on paper, a Web site can grow and evolve. One major consideration when choosing a topic should be the amount of maintenance that can be foreseen and your willingness as site manager to maintain it even after the course is over. Maintenance can mean a good deal of work for you, the instructor. I receive neither release time nor compensation for maintaining the site, although in your own situation, something of this nature might be possible once your site has proven its worth.

Before you embark on a project consider whether you would be willing to put in the time required to keep the project current. Alternately, you could decide beforehand on the shelf life of the project and see that it is taken off line once it has outlived its usefulness.

Expect the Project to Evolve and Grow

Do not expect your project to end up looking the way you originally envisioned it—it might turn out to look very different, and be better for the transformation. For instance, I did not originally plan to subcategorize the sports and entertainment figures, but as the list grew, it made more sense to do this. As another example, recently an American woman wrote saying that she had asked her students to search for famous women around the world, but the students could not tell from the Japanese names which people were of which gender. I therefore color-coded the listings by gender.

In the spring of 1999, a number of other instructors in Kyoto drafted their writing students into the project. I have, in response, developed a page showing works under construction so that students can be assured that they are the only person writing on a particular personality. A page using JavaScript and common gateway interface (CGI) allows students automatically to register their personage and add it to the under construction page. An easier, more low-tech way to accomplish this same aim would be to maintain a special page that you periodically edit, adding new works-in-progress and deleting those that have been completed and are now on line.

As mentioned earlier, the lack of pictures on the Web site is a sore point. To get permission, however, is time-consuming, so this part of the project remains on the back burner. I did attempt to get permission from a nationwide newspaper to use their photos, but found that the paper had a strict policy against this. There was a reduced rate for lending pictures to educational institutions, but even this rate was approximately $30 per picture per year. Two possibilities that might be pursued in the future are to have the more artistic students draw sketches or caricatures of individuals, and to hotlink to an existing picture on the Web, if one is available.

How your project evolves and grows thus depends on how much time you and your students can spend making the Web pages as functional and attractive as possible. Count on your site visitors to give you useful feedback. You will want to provide an e-mail address on the Web site to encourage audience response and further communication opportunities for your students.

Consider Design

This section is, by its very nature, technical and as such, is not meant to be absorbed in a single reading. If you familiarize yourself with the topics covered, you will be able to return to it at appropriate times as your own project develops.

HTML Editors

If you use the template approach for HTML production, as described above, there may be no need to use a dedicated HTML editor to produce the pages. Any word processor will do if the results are saved as Text Only. Beware of the Save as HTML option on your word processor. Some of these do not produce very clean code; it may look good when viewed on your own browser but may be difficult to edit later and may not appear as attractive when viewed from other machines. To quote Martin Holmes: "I've seen many people make lovely pages with their WYSIWYG editor, and then face disappointment and confusion when they view them on a machine with a different screen resolution, window-size, browser or whatever, and discover that they just don't work" (message on *Neteach-L*, April 28, 1998.)

I personally feel that for projects of smaller scope, hand editing of the HTML code is straightforward and hassle-free. It allows you to understand how the HTML code works and what might happen to your page when viewed with a different browser.

Slow-Loading Graphics

Many people still have slow connections. Large graphics will quickly cause people to abort the loading of your pages. A pretty banner graphic along with an attractive background color should be sufficient. Let the balance and formatting of the text, along with judicious use of tables, be the key elements of your layout. A few small graphics that are used in multiple locations, such as for bullets for various sections, are a low-load way to add additional color and variety.

Exemplary Pages

One of the great features of HTML is the openness of the code. All browsers have a View Page Source (or similar) option that reveals the code underlying the page. This allows you, the apprentice, to learn from the masters without so much as buying a book.

Portability of Page Appearance

Make sure that your design is attractive on a representative set of platforms and browsers. Ask colleagues to look at your pages on their own machines and report back on any problems they find. The more complex the project, the greater is the chance that you might overlook some bad links or problems with page design. Colors created on a Macintosh computer, for example, tend to look darker when viewed on a PC. The rendering of table elements can vary considerably between Netscape Navigator and Microsoft Internet Explorer, and among the various versions of each.

CONCLUSION

Although the Internet has been around for quite a few years, what you can do with it is constantly changing. Compared to when the *Famous Personages* project started, it has become possible to develop pages without any knowledge of HTML. It is now possible to upload documents to a server with a simple Publish menu choice instead of having to use the likes of file transfer protocol (FTP). At the same time, page development is becoming more complex, with animation, interactive elements, JavaScripting, and other possibilities that provide added functionality and flash. The downside of the evolving improvements is that they are forever keeping the technology a number of steps ahead of what most of us can master.

Do not let this worry you. There is no need to make your project cutting edge. Content still wins over glitz!

CONTRIBUTOR

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PART 4

Training Teachers

CHAPTER 11

Hands-On Teacher Training: Presentation Software

Elizabeth Hanson-Smith

◆ INTRODUCTION

One of the most popular types of software in business and academia allows the user to create presentations on a computer workstation and, in turn, display them on a large overhead projector screen or broadcast them over the Web. Salesmen can show customers photos of equipment with text labels and full-motion video to demonstrate how new equipment will operate. Prospective employers can view graphics-enhanced resumes. Teachers and professors can show their lecture subject, rather than just tell about it. Hyperlinked media allow students to demonstrate their knowledge in many areas by linking video, sound, text, and graphics to their running linear text. Increasingly, students are using this media capability to enhance their research and to create presentations for class. English language learners can benefit from learning how to use presentation software, both as an adjunct to the skills they need to survive in an academic setting, and as an important resource when they enter the world of work. The manipulation of multimedia tools also satisfies the creative instinct and allows students to deploy a wide variety of learning strategies. Their teachers thus need to be able to show them how to make the best use of this important tool.

One of the most satisfying types of workshops that I have given over the years is to instructors who are preparing to teach their students how to use computer presentation software. The teachers have come from many fields: middle school and high school, intensive programs, community colleges and universities. Their computer skills have ranged from almost nonexistent (How do I save my program to a diskette?) to quite competent (How do I adjust the color scale in this photo?). But their level of satisfaction with the end product they create has usually been quite high: Presentation software allows users to invent and "re-present" themselves; it offers their imagination an opportunity to expand and permits their creative selves to emerge on many levels.

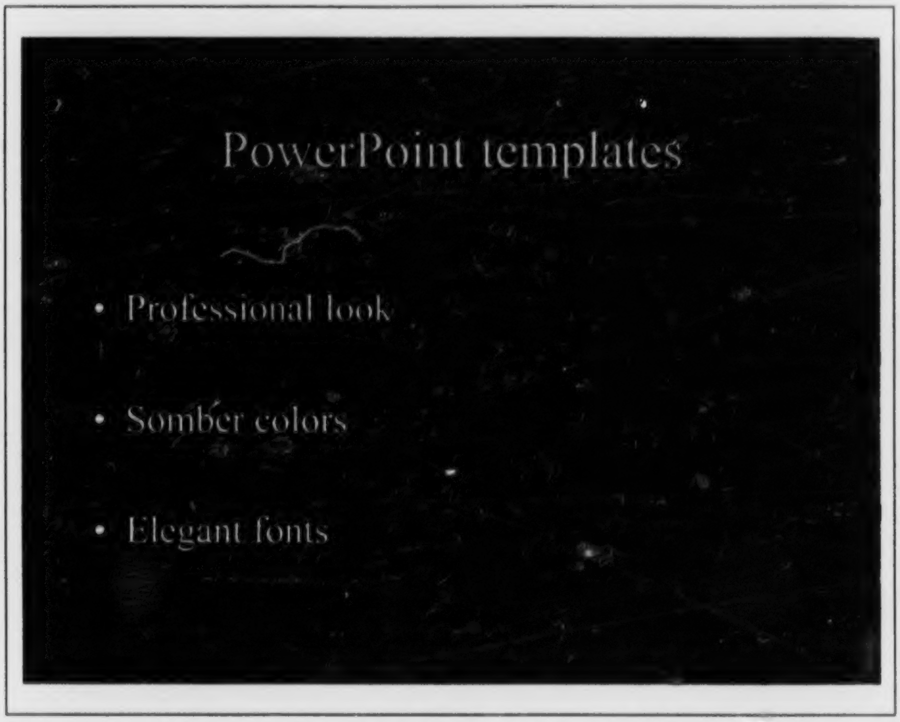
This chapter describes a weekend workshop that I taught at the TESOL Academy in Seattle in 1997. I used HyperStudio (1997) for this particular workshop, although other, similar software programs, such as Microsoft PowerPoint (1995), HyperCard (1997), ToolBook II (1996), or SuperCard (1999), work equally well for teaching purposes. I will offer some suggestions for getting teachers started, including hands-on activities for users with widely varying levels of experience, and ways to help teachers find presentation projects that meet their own students' needs and learning styles.

◈ CONTEXT

The TESOL Academy takes place every summer in several locations, including overseas sites. The workshop I conducted took place in four half-day sessions spread out over the course of a weekend in the learning lab of Seattle University (Seattle, Washington, in the United States). The 21 participants came from as far away as Korea and Japan, and about a third of them were not native English speakers. Most had had some computer experience, mostly with word processing software. A few had not used the Internet before. Some had difficulty saving files to diskette. Their teaching situations ranged from elementary school to university, with a large percentage from high schools and community colleges. A nearby school district sent four participants as a group in order to prepare them for new computer labs in their schools. One community college teacher knew that her lab was equipped with HyperStudio software and was eager to try out the program before school started in the fall.

My goal during this workshop was to have each teacher complete (and be able to take home) a short HyperStudio program that included text, graphics, sound, photos, and, optionally, video. The participants would learn how to use multimedia tools whose functions are relatively standard across a wide variety of presentation programs, as well as more advanced applications, such as Adobe PhotoShop (1996) and desktop publishing software. They also would become familiar with some of the tools commonly used with computers: scanners, digital cameras, recording devices, and Internet browsers. They would learn by experimenting and creating their own programs. As with most presentation programs, the application itself allows the user to save a freestanding version of a presentation: It can no longer be edited, but it will run by itself on any compatible computer.

One advantage to using HyperStudio is that Roger Wagner Publishing (RWP) is extremely teacher-friendly. The company provided each teacher with a free guide to the application and a demo CD-ROM that would allow the creation of a short program later on at home, including templates for sound and the full tool chest of graphics tools and fonts. (Any teacher can obtain demo software from RWP at the *HyperStudio*, 1999, Web site.) For the purposes of the workshop, RWP also provided me with a full version of the application on a time-dated CD-ROM that could be used during the course of the Academy. In corresponding with Seattle University, however, I found that they had already purchased and installed the full application, thus saving me the installation time. Like most of the other presentation programs suggested above, the full HyperStudio application comes with templates, examples created by students and teachers, a Web plug-in to allow presentations on the Internet, and Web site support in the form of bulletin boards, archived information, electronic discussion lists, and chat rooms. Whereas Microsoft PowerPoint is oriented to the business world (see Figure 1), the graphics and templates for HyperStudio are more colorful and more oriented to the school environment (see Figures 3 and 4 later in this chapter). However, similar effects can easily be created in both applications.



PowerPoint templates

- Professional look
- Somber colors
- Elegant fonts

Figure 1. Sample Microsoft PowerPoint Graphics and Templates Oriented to the Business World. Screen shot by permission of Microsoft Corporation, Redmond, WA.

◆ DESCRIPTION

Although it may seem that 16 hours is a very short time to learn how to use an application and actually produce something with it, presentation programs are very easy to use, and I have actually taken teachers through an abbreviated version of this workshop in 4–5 hours. An added advantage of learning to use presentation software is that once any one application is learned, most others, including Web page editing software and the graphics tools in word processors, have a similar interface, and so the skills learned with one tool may be applied to any other. An outline of the four-session course follows.

Session 1 (Friday Afternoon)

Goals: Understanding what presentation software is and why and how it is used.

- Using presentation software projected on a screen, demonstrate the concepts using programs created by students.
- Group participants to brainstorm possible projects, including who might do which task on the design team.
- Have groups report back on their projects and discuss sources for graphics, sound, and video.

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- Demonstrate how to create a new stack (also called a *book* or *slide show*), how to use the various drawing tools, and how to make navigation buttons that enable users to go backward and forward through the stack.
- Allow time for hands-on practice with the presentation tools.
- For homework, ask teachers to find magazine pictures or bring in photos or drawings they might use for their projects.

By the end of the first session, teachers should be familiar with the concept of presentation software, its capabilities and limitations, and have thought about ways they might use it with their students. Some suggestions for using presentation software in a school environment are listed in Figure 2.

I used an Authorware Star (1994) presentation to demonstrate the kinds of projects that might be undertaken and to show a third type of presentation software. I then showed parts of some of the actual work completed by middle school and high school students with HyperStudio. (See Hanson-Smith, 1997, and Figures 3 and 4.) The Countries in the World Travelogue Stack, for example, includes a welcome card from each area of the world. A click on the students' names plays the audio greeting in their voices. Maps were downloaded from Internet sites, pictures of places came from family photo albums, and music of the country from tape recordings brought from home.

I found that it was very important for teachers to dig right in to the actual creation of a stack, so my demonstration of how to use the drawing tools was very short. It is better for teachers to make lots of mistakes in the nonthreatening atmosphere of the workshop than to understand the theory of how to make a stack and be helpless when their students get into difficulties. A brief demonstration of how to open the tools was followed by a short handout taking the teachers through the stack, card, field, and button creation.

Even though there were plenty of workstations to go around, I placed the teachers in groups of three based on two criteria: spreading around the computer expertise so that advanced users were grouped with beginners, and ensuring that international teachers were paired with U.S. teachers, most of whom, I assumed, were used to the idea of working in groups and had some familiarity with the concept of project- or task-based learning. Despite the lack of time to get acquainted, the groups worked fairly well, with the exception of one teacher who wanted to work on his own. As the teams worked through my short handouts, I circled from station to station, answering questions and offering advice. By the end of the session, each group had created a stack with several cards and each participant had had a chance to doodle, fill in colors from the palette, and create text fields with a variety of fonts.

Stack ideas were as varied as choices of colors and background designs. One group decided to create a stack representing an ideal house. Each person would contribute an idea, and several cards would combine the ideas into a type or model of what was desirable in a living space. Several groups decided to use the stacks to tell others about their home countries and cultures, comparing and contrasting, or seeking cultural similarities, or as a way to introduce their lives at home to their international counterparts. They used pictures brought with them of family and home, and graphics downloaded from the Internet. Cross-cultural relations is a significant topic in the multicultural school rooms of the United States, and it became the basis for stacks created by the students of one of the academy

Presentation Ideas

A hometown electronic magazine

- Interview local "celebrities" and include their pictures and audio files.
- Research town history and illustrate it.
- Create a map with clickable thumbnail photos of interesting places.
- Write reviews of the best places to eat, take a date, listen to music, etc.

A school newspaper or media journal

- Include video clips and audio files of student artwork or poetry.
- Animate cartoons.
- Interview schoolmates in the news and include their audio files and photos.
- Include video clips from sports events, dances, or other school activities.

Jobs and careers

- Research typical salary scales, housing costs, and employment prospects.
- Interview prospective employers or human resource officers and include audio and video clips.
- Illustrate how to "dress for success" in a job interview.

How to make cross-cultural friends

- Research the language groups in your school or class.
- Record and use video illustrations of important phrases and gestures in the native languages of others.
- Research the native countries' geography, history, and culture; use pictures supplied by parents from the home country, or Internet files to illustrate (see Figure 3).

Travelogues

- Research places to see in home countries and illustrate with Internet files or pictures brought in by students.
- Interview classmates about their favorite places to visit.

I-search papers

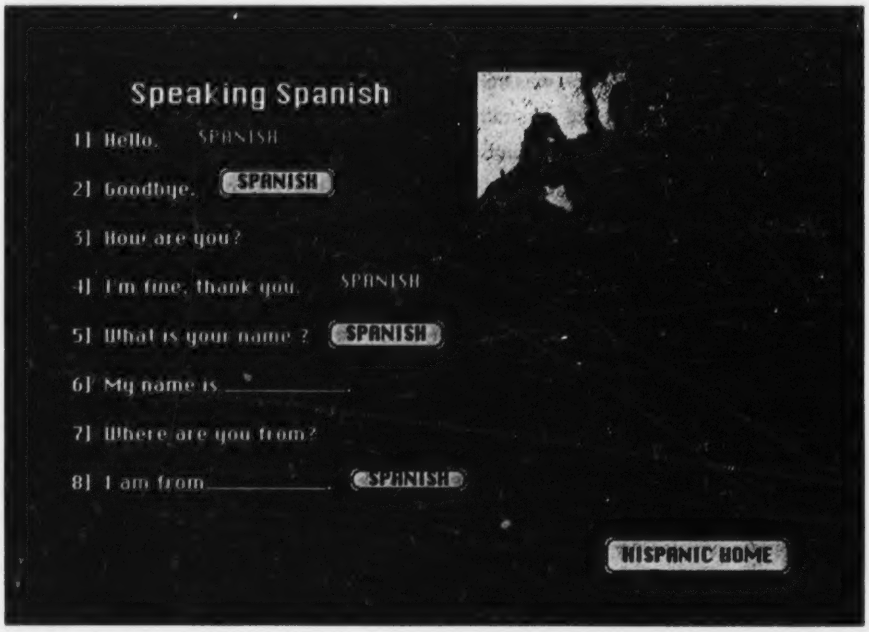
- Students research a topic they are interested in (narrowed down with help from the teacher; see Macrorie, 1988 for a fuller explanation of "I-search").
- Individually or in groups prepare presentations to teach others about your topic.

Curricular exchange

- Many classes around the world now participate in curricular and cultural exchanges; students can send a self-contained presentation program on diskette or over the Internet as a way to introduce themselves to another class or to begin an exchange of information about school subjects.

FIGURE 2. Ideas for Software-Generated Presentations

participants, Ann Swanson, who taught at a community college in Moss Lake, Washington. Her students worked in cross-cultural groups from Canada, Japan, and the United States (including regions distant from Washington state), and they focused the HyperStudio stacks (which Ann subsequently sent to me) on the experience of meeting each other in an international educational setting.



Speaking Spanish

1] Hello.

2] Goodbye.

3] How are you?

4] I'm fine, thank you.

5] What is your name ?

6] My name is ______.

7] Where are you from?

8] I am from ______.

FIGURE 3. Making International Friends. (Stack includes language with audio files, gestures with video clips or photos, music from tape recordings brought from home, and Internet research on the geography and people of the students' countries.) Produced by El Barrio de los Conquistadores team (N. Hernandez, I. Kislitsa, A. Teleten, K. Morales, S. Shima, P. Gutierrez, C. Chavez, A. Gutierrez, G. Mayoral, G. Matosyan, M. Navarro) at the Jonas Salk Middle School/Encina High School Academies Title VII Summer Institute (1996). Used with permission.

Session 2 (Saturday Morning)

Goals: Learn to use audio recording tool, video camera, and scanner while continuing to work on stacks.

- Discuss any problems that arose in the previous session.
- Demonstrate remaining tools, including the recorder; have teachers record their own voices.
- Demonstrate the addition of graphics files to a card (also known as a page or slide). (I also indicated that video files could be included in the same way, but treated video as an optional element.)
- Have each group learn hands-on how to use the scanner while the other groups are working on their stacks.
- Discuss design conventions in software, using some of the student programs on the projector as examples.

Although I had brought a small "eyeball" video camera, it appeared that the teachers had not planned to include video, and many did not have access to this tool at their home schools. Therefore I demonstrated this feature of HyperStudio, but left

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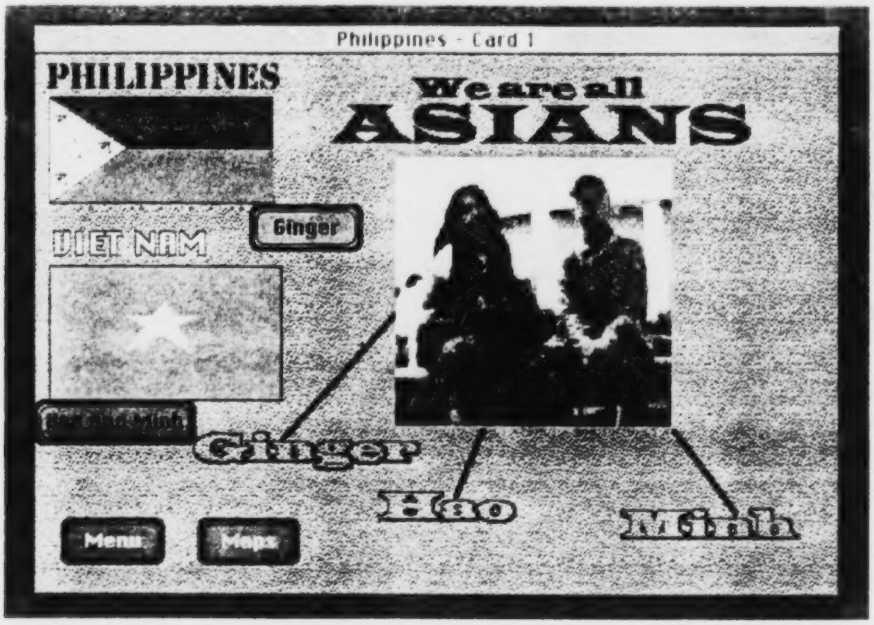

FIGURE 4. Countries in the World, a HyperStudio Travelogue Stack. Produced by the Internationally Cool Team (L. Anguiano, L. Ayrapetyan, Y. Berhane, E. Contreras, A. Divakov, T. Fayyer, G. Guevara, M. Luc, W. Najera, H.T. Nguyen, E. Vlayovl) at Jonas Salk Middle School/Encina High School Academies Title VII Summer Institute (1996). Used with permission.

it up to the teachers to decide individually if they wanted to learn more. The small video camera I had was a bit finicky to set up and use, and rather than take a great deal of time in the workshop to get it running for each group, I assumed that on their home campuses teachers would be able to seek out technical help with their own equipment.

Rather than demonstrating the scanner to the whole class, I walked each group through the process. After the first scan was completed, I left them to help each other with the photos they had brought while I gave assistance to other groups. Because the scanner was not on the local network, the files had to be saved to diskette. Scanner operation is relatively similar across platforms and machines, so the process learned on one piece of equipment is readily transferable to another. The group working on the ideal house experienced the only problem encountered. They had selected pictures from the real estate advertisements in the newspaper, and so the quality of the scanned reproduction was very poor. In the end they decided to use drawings, which they made themselves using the HyperStudio tools, and graphics downloaded from Internet real estate pages.

HyperStudio allows quite a bit of freedom in designing cards, so I thought it worthwhile to make the teachers aware of some typical software design conventions. This was an element that also seemed important for their students to be aware of.

However, I did not try to enforce a uniform design or pattern, and the groups generated quite varied and interesting screens.

Session 3 (Saturday Afternoon)

Goals: Learn where to find graphics and text resources on the Internet and how to download and save audio and graphics files; learn how to handle fair use and plagiarism issues; create a design on paper.

- Distribute list of World Wide Web sites with interesting graphics material that can be used copyright-free by teachers and students.
- Assist teachers with local procedures required to go on line.
- Demonstrate on the projector how to save a file to a drive or diskette.
- Demonstrate image-editing tools in HyperStudio.
- Revision: Have teachers create a large (5-in × 8-in) index card version of their stack, indicating the location of buttons and proposed links to other cards; tape cards to the walls above each group's main workstation as a map with colored tape indicating hyperlinks.
- Continue working on stacks.

Although some teachers were fairly expert in roaming the Internet, most had not learned how to download graphics, even though this task usually involves fairly simple procedures. Teachers found this a very enjoyable experience, as it seemed to make the Internet more accessible. During this activity, the importance of mixing computer expertise in the groups was again evident. I revisited the issues of fair use and plagiarism as I circulated among the workstations to help the groups.

Two problems arose during this activity. One was that teachers were not always aware of the file name under which the graphics were saved. This was an issue related to general computer knowledgeability, rather than to the use of a presentation program, and often the missing file could be found by searching the hard drive for the files with the extension *.gif* or *.jpg*, the most typical graphics file types. The second problem encountered was that some graphics were embedded in their respective Web pages in such a way that they could not be downloaded and saved to the local hard drive. This will no doubt increasingly be the case, as the Internet is driven more and more by commerce. I tried to point participants to pages created by teachers, environmentalists, some publishers, museums, and public organizations, such as schools and colleges—pages that often are designed specifically for the use of educators and students.

At this point in the stack creation process, the teachers had generated several cards and were beginning to get a little lost. Even though most applications allow the user to see a thumbnail version (tiny pictures) of the whole stack or slide show, the cards or individual slides are very difficult to see, and the links among them are not evident. A paper map of their stack design, created on index cards with colored pens and taped to the wall, was a real aid at this point in preventing burnout and loss of the train of thought that had originally sparked their project, particularly because the medium itself tended to lead each group into increasingly elaborate hyperlinks. By the end of the afternoon I could hardly pry the teachers away from the computers to go to dinner, and I found myself working into the early evening to clean up the lab for the final push the next morning.

Session 4 (Sunday Morning)

Goals: Finish stacks and show them off.

- Continue work on stacks.
- Save finished stacks to diskette in order to take them home.
- Show and tell.

The hardest part of the final session was to get everyone to stop working. Much as the teachers wanted to see each other's work, they also wanted to keep elaborating and polishing their own projects. I hastened to point out that this kind of enthusiasm for work is the usual case with students also.

DISTINGUISHING FEATURES

Building Skills Hands-On

Although many teachers believe in the efficacy of task-based learning, the university environments in which they receive their preparation often do not employ tasks and projects to complete course goals. As with many areas of computer-assisted instruction, learning by doing seems to me a crucial aspect of the process of understanding presentation software. As with learning a language, learning how to use software tools is a matter of hands-on practice.

Working in a Group

Teachers are often highly individualistic, but in learning and practicing a new skill, particularly in a short-term workshop, having someone right at their elbow makes a significant difference in their enjoyment of the learning experience. The only teacher who seemed less than completely satisfied with the workshop was the one who insisted on working completely alone. Group work is especially important if the learners have a variety of expertise and language skills—as is true for English language students as well.

Making Mistakes

Every error is a learning opportunity, and perhaps the most teachable moments are those in which a mistake has occurred. If teachers feel that no mistake is completely unforgivable, they themselves will be empowered and will empower their students in turn. Although we did have a few instances in which files were deleted by mistake, the teachers who committed the errors felt that their final products were even better because they had done them over with further elaborations. It was also encouraging for them to learn that even when the whole system crashed a few times, nothing could really hurt the equipment, and most work was retrievable.

Learning a Usable Tool

Presentation software is very much a part of the real world and is widely used in business and schools. The tools that are used to create media presentations have wide applicability across many different kinds of software. The teachers were mastering a tool that would enhance their own lecture skills.

Letting Go

Using multimedia tools to create a presentation is perhaps one of the few instances in their education when teachers can really let their imagination out to play. Even in a short-term workshop, the creative aspects of the computer tools seemed to captivate the teachers. As with students I have taught to use presentation software, the teachers just did not want to leave the lab at the end of the day. This seemed to me a valuable lesson in how to make learning of all kinds an enjoyable experience. I offered models of what others had done and suggested types of projects, but I left it solely up to the groups to decide for themselves what was meaningful to them, what should be included, and what their presentation should express.

PRACTICAL IDEAS

Encourage Hands-On Learning

Ensuring that teachers really perform computer skills, rather than just passively observe them, is the key to successful training in new technologies. Although teachers are increasingly becoming familiar with computers and the Internet, each new tool represents a challenge, and for some, a steep learning curve. Hands-on training can be exceedingly motivating and can encourage teachers to take chances in their own school setting.

Personal investment in the training experience is a crucial aspect of a software workshop. If teachers merely view a demonstration of an application, they are far less likely to use it than if they try it out themselves. Furthermore, if they are asked to create something that is meaningful to themselves, they can better place themselves in their students' shoes, understanding both the challenges and the rewards of this new experience with technology.

Allow Time for Sharing Ideas

Sharing time is very important in creative projects such as stack making because the work of one group will inspire another. I recommend always building in time to discuss and do show-and-tell as teachers (and students) work on their programs.

Use Groups

In terms of the physical site itself, it is important not to let a shortage of computers hinder the process. Group work is valuable for the many reasons suggested above, and with only a few computers available, it may be necessary. The lab where I gave the TESOL workshop happened to have more than enough workstations for the participants. This feature allowed the groups to split up to work individually on cards or graphics while the group computer was reserved for pasting the final presentation together. Such a relatively luxurious setting is not, however, a precondition for a good training session. In a classroom, teams can create projects on just a single workstation.

Choose Flexible Software and Equipment

It is also important to focus on the software features and equipment that are most likely to be replicated elsewhere. I chose HyperStudio because it is available for both IBM-compatible and Macintosh computers, and the program operates the same way on both platforms. It also has a plug-in to create Web pages. Although the workshop was held in a lab furnished with Macintosh computers, the tools used by the teachers could easily be transferred to a presentation application in their home labs. The same is true of the scanner and the use of the Internet: Although for the latter the local sign-on protocols had to be used, the general approach to finding good sites and downloading files could be applied across platforms and browsers.

I gave less weight to learning to use the video camera because this tool is apt to vary more in local settings and software interfaces, so the teachers would have to rely on their local technical help to use their own equipment. I should add, however, that in a somewhat longer workshop I gave at Cayey (University of Puerto Rico), one group of teachers appropriated the camera (which I had left hooked up to the projection setup) and secretly made videos for their presentation while I was in another part of the building. I was surprised and delighted to see the finished product.

Offer Opportunities for Practice

Follow-up is important. Using a presentation program is like learning a language: It requires regular practice. Having received a demo CD, the user's guide, and the Web address of RWP, the publisher of HyperStudio, for more assistance, the teachers had the opportunity to work on a short program on their own once they returned to their home campuses. I also asked all of the workshop participants to stay in touch with me through e-mail, and I was able to help some teachers while they worked with students during the following semester.

Although most presentation programs come with a user's guide, I found it valuable to create my own much shorter version with instructions only for the most frequently used tools, and with advice based on my experience with teachers' and students' problems in using the software. This abbreviated guide helped teachers get right into stack creation. It is important for a teacher trainer not just to learn the program, but also to decide on which elements can be ignored and what typical problems may be encountered. Offering information as it is needed, rather than trying to cover all the material in the user's guide, allows the teachers to explore and discover how the program works on their own. They can refer back to the guide when they run into a problem.

Provide Auxiliary Supplies

Using paper, colored pens, index cards, tape, and other realia in addition to cyber assistance on the projection screen is extremely important, first, because teachers are more familiar and comfortable with these tools, and second, because hypermedia can get very confusing. A teacher trainer needs to bring plenty of paper supplies and extra diskettes in order to make the workshop run smoothly.

CONCLUSION

Presentation programs have so many real world uses that they must be considered one of the most important elements of computer literacy for both ESL/EFL students and teachers of a language. They are not difficult to learn, and they provide an enjoyable task that allows for self-expression and the use of many different learning styles. As a tool for group projects, presentation programs offer the students opportunities to practice interactive language, as they collaborate with other group members, as well as the higher level cognitive skills of organizing, researching, contextualizing, and displaying information to an audience.

CONTRIBUTOR

Elizabeth Hanson-Smith is a software designer and educational technology consultant. She serves on the TESOL Board of Directors, authored *How to Set up a Computer Lab* (Athelstan) and, with Joy Egbert, edited *CALL Environments* (TESOL). Her software credits include Constructing the Paragraph (Computers for Education), Oxford Picture Dictionary Interactive (lead designer; Oxford University Press), and Live Action English Interactive (design team/quality assurance; written by Larry Statan, Command Performances).

CHAPTER 12

A Teacher Preparation Course for Computer-Assisted Language Learning

Sarah Rilling

◆ INTRODUCTION

Computer technology has become more common in educational contexts over the past 2 decades, from single computers for individual use in elementary school classes to networked computer labs in secondary and postsecondary institutions. Early use of computers in language education focused students on skill-and-drill activities and word processing. In recent years technology has become more sophisticated in function and at the same time easier.to use. Computers can now provide students with multimedia learning opportunities and Internet connections for research and communications. Teachers can use computers to keep grades, create customized lesson materials for learners, and remain current and connected professionally.

In this information age, we expect a certain degree of computer literacy from our students, whether it is just keyboarding and mouse use, or accessing information through the Internet using databases such as encyclopedias or on-line library catalogues. To meet this expectation, we teachers need to improve our own computer literacy skills in order to provide students with opportunities to learn through this exciting medium and to open a world of professional resources for ourselves. Instructional positions in TESL/TEFL frequently call for skills in and experience with computer-assisted language learning (CALL), creating a need for teacher education programs to provide pre- and in-service teachers with an increased understanding of technology.

This case study presents a syllabus for a Computers in Language Teaching (CLT) elective course at the graduate level in the MATESL program at Northern Arizona University (NAU) in Flagstaff, AZ. I first taught this 5-week course during the summer of 1996. The CLT course provided participants with hands-on activities designed to explore and develop software and support materials for computer-based learning activities. In addition, participants in this course explored theoretical issues related to computers in education through traditional and computerized discussion formats. Such a course can be viewed as a process of curricular and program development in response to technological demands.

◈ CONTEXT

Students in TESOL preparation courses, housed within the English department at NAU, fall into four categories:

1. undergraduates seeking a minor endorsement in TESL
2. graduate students in an MATESL program
3. MEd students in bilingual education
4. PhD students in applied linguistics

NAU has a small Program in Intensive English (PIE), which operates its own computer lab. During the summer of 1996, the PIE computer lab was being updated with new computers, so several of my students had hands-on opportunities to set up hardware. This rendered the PIE lab inoperable for this summer course, however, so we met in other computer classrooms operated by the history department and the composition program. In addition, the laboratory in the Department of Modern Languages was available to students for exploration of software as well as demonstrations of equipment and uses by the director of the lab. Several computer labs on campus maintained regular hours during the summer, so students had ample access to computers throughout the course. The computerized resources at NAU gave us hands-on opportunities to explore a variety of software and hardware, and gave us experiences with different configurations for computerized classrooms, ranging from traditional rows to more open designs using pods or the outer perimeter of the room. In addition, we had access to an array of teaching equipment, including computer projectors and large TV monitors, the Internet, and local area servers. University and College of Arts and Sciences personnel were available to present various technological innovations and troubleshoot when software or networks failed. Computer support at NAU also provided a user-friendly Web publishing interface on the student and faculty computer servers. Overall, technology access and support at NAU were outstanding, facilitating implementation of the CLT course.

◈ DESCRIPTION

Fourteen graduate students with a wide range of interests and computer abilities enrolled in the CLT course in the summer of 1996. Of these participants, 11 were in the MATESL program, one was a PhD student in applied linguistics, and two were enrolled as non-degree-seeking graduates in education. One of the participants was an elementary school teacher, another was a middle school teacher, and the remaining 12 were interested in teaching adults in various educational contexts (TESL, TEFL, and English on Native American reservations). Ten of the course participants had basic computer competencies in a variety of software programs, including word processing, spreadsheets, and the Internet (using the Web and exchanging e-mail). Two students had an interest in computer programming for linguistic analysis, one having already completed a programming course. The remaining four students had little computer experience, although all were familiar with simple word processing and basic e-mail functions. All participants were eager to expand their skills, and several wished to overcome varying degrees of computer phobia. To take the CLT course, all students were required to have certain core skills including keyboarding, use of spreadsheets for graph and grade book production, understanding of electronic list functions, and use of a concordance program for materials and test development. Further optional content, including Web page and software development, could be explored by more advanced students.

During this intensive 5-week course, we met approximately 10 hours per week in different computerized classrooms at NAU. Most of our class sessions were focused on helping students to improve their own hands-on command of computers and exploring the uses of technology in teaching ESL/EFL. Class activities included using a selection of software programs as well as discussing readings in computerized discussion groups. In addition, students were required to complete projects and writing assignments (e.g., reviews of software) outside of class.

Course content for Computers in Language Teaching was divided into roughly six units:

1. *Honing computer skills* (e.g., keyboarding and mouse use, advanced word processing techniques, and spreadsheets as grade books)
2. *Reviewing commercially available software*
   Conrad, 1996
   Healey, 1995
   Alessi & Trollip, Ch. 7, 1991
3. *Reviewing software authoring programs and/or producing software*
   Alessi & Trollip, Chs. 8–10, 1991
   Chapelle, 1996
4. *Developing supplemental activities using the Internet*
   Warschauer, Chs. 1–6, 1995
5. *Developing professional Web pages and understanding their uses*
   Sussex & White, 1996
   Tuman, 1996
   Day & Schrum, 1995
   Sussex, 1996
6. *Designing classroom materials based on corpus linguistic techniques*
   Biber, Conrad, & Reppen, 1996
   Johns, 1991
   Flowerdew, 1993

In the first 2 weeks of this short course, students demonstrated hardware and software mastery. In the first week, they explored a variety of foreign language software packages, including word processors and language learning programs. Students focused on the interface design and usability of various software packages. During this portion of the course, students also focused on CALL in foreign language learning. Through Conrad's article (1996) and his presentation in person in the Modern Language Lab, they addressed issues related to computer interfaces, including user control of the software environment. The class as a whole modified the Software Review Checklist (based on Alessi & Trollip, 1991), and used it to evaluate commercial language learning software.

During the second week, students evaluated software developed for native speakers including encyclopedias, dictionaries, and games. Students benefited from Healey's (1995) outline of different types of software (skill-and-drill vs. computer tools for materials development), and from her review of commercial software and adaptation techniques for using native-speaker software with second language learners. The class also examined the process of designing software, including brainstorming ideas in teams and storyboarding the function and layout of software (Alessi & Trollip, 1991), and read a short history of research in CALL, which suggested avenues for continued research on the use of computers in language teaching and learning (Chapelle, 1996).

In the third week, students explored the terminology and tools for Internet use in the classroom, including the use of Gopher and the Web for information retrieval, file transfer protocol (FTP), and e-mail for a variety of purposes such as professional communications and cross-cultural exchange among students (Warschauer, 1995). Students subscribed to at least two professional electronic lists (e.g., several branches of *TESL-L*). After *lurking* (reading but not posting to the lists) for about a week, they wrote a review of the discussions they had observed on one list. Because students were participating on different lists, they shared their evaluations of the electronic discussions with each other. In addition, three students became active on the lists by posting queries or responses to various discussion threads. Students were required to demonstrate the differences between sending electronic discussion list commands (e.g., unsubscribing) and posting messages to the list.

The following week, students focused on the World Wide Web. They looked at the issues of interactive reading strategies in hypermedia, including branching linked texts, sound, and visuals (Sussex, 1996). Depending on their level of computer skill, students could choose to explore Web sites and develop content-based materials for teachers or learners, using Healey's (1995) software reviews as a pattern, or develop and publish their own Web pages. Web editing applications were in early production in 1996, so I trained my students in hypertext markup language (HTML), the authoring language read and displayed by Web browsers such as Netscape Navigator (1997). Students were provided with a template of an HTML page in plain text and shown how to create a space for a home page on NAU's student server. In addition, students learned how to manage documents on the Web with a few simple commands to the campus server. NAU's computer support staff had prepared a user-friendly Web publishing environment, so only three commands were necessary to publish even sophisticated Web pages. By using a graphical FTP program, students could easily transmit their Web pages to the server. We also worked with scanners and Adobe PhotoShop (1989) software in two student labs, so that students could digitize and publish graphics on their Web pages. Students learned how to create links to external sites, and they explored design and layout techniques for enhancing the visual quality of their pages, such as using lists, changing font or formatting styles, changing background colors or images, and using images appropriately.

During this week with the Web, the class held discussions using different computer media for communications. We used synchronous (real-time) discussions on Internet Relay Chat (IRC) and FirstClass (1990) as well as asynchronous listlike discussions (nongraphical newsgroups and lists distributed through e-mail). We also used a graphical software interface (FirstClass) on a local area network (LAN), with both synchronous (real-time) and asynchronous functions. Students discussed issues in using computer networked learning, where to find resources for shareware and on-line texts, and how to adapt pedagogical practices in computerized classrooms (Sussex & White, 1996).

The fifth and final week of the course focused on corpus linguistics techniques using software and computerized texts. Students examined the use of concordancing for research (Biber, Conrad, & Reppen, 1996), and for tasks that enabled learners to make their own discoveries about lexical and grammatical patterns in language, as well as for handouts for teaching and testing (Johns, 1991; Flowerdew, 1993). While exploring on-line newspaper texts using a simple shareware concordancer, students developed concordance-driven materials and activities for language learners.

DISTINGUISHING FEATURES

Several aspects of this short course were extremely effective:

- Flexibility was built into the course by allowing students to proceed at their own pace in cross-level groupings.
- Foreign language software gave students firsthand experience in how less able learners might feel using an interface with a language they did not know well.
- The variety of computer equipment and guest speakers gave students the opportunity to learn by both seeing and doing.
- Students practiced computerized communications using a variety of media, expanding their understanding of computers for use in both teaching and professional development.
- The use of electronic journals for communication between my students and me reduced computer phobia and allowed students to reflect on good pedagogy in using computers for language learning.

Course Flexibility

Flexibility of activities was built into the course by allowing students to explore computer applications that were suitable for their own level of competence. Some students were able to demonstrate only core proficiencies, whereas others were able to extend their competencies to programming. Students spent time on each of the six content units (described in the CLT course content list above), according to their own interests and previous computer experience, as outlined in Table 1 below. All students benefited from Units 2–4, as they developed an awareness of issues related to the evaluation of commercial software and Web sites, such as software interface design and control in a hypertext environment like the Web. The student who designed a lesson using HyperStudio (1997) chose that authoring application because her school district had purchased it.

Some projects for the course were required (e.g., electronic list participation, three software reviews, and development of an evaluation form for commercial software), but three other projects were chosen by the students according to their computing abilities (see Table 1 for project types). By choosing their own projects, students could develop skills in areas of their own interests and at appropriate computer proficiency levels.

The course functioned as a workshop, with groups of students working together on different projects within each of the six content units. As instructor, I was available to assist students one-on-one or in small groups with problems encountered either with the technology or in developing or realizing project plans. By

TABLE 1. FLEXIBLE COURSE REQUIREMENTS

Less Experienced Computer Users	*More Experienced Computer Users*
Develop core computer proficiencies; spend more time on Unit 1	Demonstrate proficiencies; study authoring
Participate in electronic list, develop software evaluation form, produce three software reviews	Participate in electronic list, develop software evaluation form, produce three software reviews
Understand principles of authoring software	Complete an Authorware (1994) tutorial or create a HyperStudio (1997) lesson
Create supplemental activities for native language commercial software	Design and implement software for language learners
Create supplements for or reviews of existing Web sites; create relatively simple Web sites	Design and implement Web sites with a degree of sophistication
Develop understanding of principles of corpus linguistics and use of a concordancer	Create learning materials with a concordancer

working in groups, less able students could learn from their more technology-competent peers, and the more competent students learned strategies for teaching by demonstrating skills and verbalizing steps (rather than completing tasks) for the others. For some projects, students with similar skill levels were paired up to expand skills together by collaborating to solve problems using resources such as on-line help. Group configurations with students of similar and dissimilar skill levels promoted experimentation and maximized learning.

Use of Foreign Language Software

In the first week of the course, students were exposed to a variety of software packages in several different foreign languages, including French and Japanese. All 14 of the students had varying proficiencies in one or more foreign languages. In fact, two of the students were nonnative speakers. The Modern Languages Lab at NAU was well equipped with foreign language software: skill-and-drill programs, word processors with foreign language menus on a networked drive, multimedia lessons designed by foreign language faculty, and so on. The software review checklist we developed together as a class enabled students to focus specifically on ease of use of the software and provided a clear record of features. A modified version of our software checklist (based on features described in Alessi & Trollip, 1991) is reproduced in Figure 1.

All students were required to examine software from more than one language, so students gained exposure to at least one piece of software developed for a language with which they were not familiar. This experience heightened the student teachers' awareness of how learners may become frustrated if the software is not transparent to use—that is, when the learner has to focus on how to operate the program rather than on the language learning task it presents.

Software Review Checklist

Purpose of the Software:
- Content of the software:
- Level of learner:
- Overall evaluation:

Language:
- Reading level:
- Extent of written language used:
- Extent of oral language used:
- Accuracy of language used:
- Readability of text:

Menus and Control Features:
- Ease of use:
- Help menus:
- Appropriate input devices:
- Ability to exit at will:

Tasks:
- Task type:
- Task variety:
- Text support:
- Visual support:

Visuals:
- Quality of display:
- Appropriate graphics:
- Appropriate text:

Feedback:
- Score provided to learner:
- Score recorded for teacher:
- Security of record keeping:
- Clues provided:
- Appropriate support provided:

Support Material:
- Software manual:
- Supplemental materials:
- Help screens:

FIGURE 1. CLT Course Software Review Checklist

Computer Pedagogy Through Observation and Practice

Guest speakers with different areas of expertise were invited to present to the class. Topics included demonstrations of multimedia lessons and placement exams created with authoring programs, technical aspects of IRC and various Web "plug-ins" (miniapplications, usually multimedia enhancements, which allow a browser to download files configured by various software programs and launch them automatically), aspects of Web design and coding, and Web site management.

Students benefited from the guest speakers in two ways. First, students learned about the speakers' areas of expertise, and, second, students were able to observe four technical experts teaching with and through technology. Although the primary focus was on content, being able to see the speakers' different techniques of presenting information also provided my students with models for teaching in the computerized classroom. The guest speaker who demonstrated an authoring application, for example, made a brief Microsoft PowerPoint (1996) presentation, effectively using a computer attached to a projection device. Another presentation was less effective, as the speaker raced through the necessary steps too quickly, without allowing the students to go through the steps themselves. In subsequent class discussions, we found several solutions to this problem, such as slowing the pace and providing written support in the form of handouts or downloadable files. Hands-on demonstrations were especially well received because students could observe how the speaker interacted both with the class as a whole and one-on-one. By observing different people teach using computers, students were able to reflect on how poor practices could be improved and good ones adopted.

In addition to the guest speakers, I daily modeled computer use for teaching, using a variety of techniques and strategies, depending on what technology was available in the computerized classroom or lab where we were meeting. On some days, I presented background lectures with PowerPoint support. On other days, I wrote out information for the students and posted it to our electronic list or asynchronous discussion group on FirstClass (1990). Students also presented projects informally throughout the course using computer support, so they actively practiced presentation strategies.

Computerized Communications for Teaching and Professional Development

One of the best-received aspects of the course was the variety of computerized communications used for class directions and discussions:

- Lesson plans were posted to our class discussion lists through an e-mail distribution list, an electronic list, or an asynchronous conference in FirstClass (1990).
- Virtual office hours, which I held through e-mail, allowed me to reply to student queries within a 24-hour period.
- Regular on-line discussions related course readings, student projects, and guest speakers. Several students continued to interact with me and with each other through e-mail after the end of the course.
- Electronic journals (described below) were required three times during the 5-week course.

- Participation in professional electronic lists extended understanding of issues in ESL/EFL. These professional discussions revolved around both general pedagogical issues and specific issues involving computers, thus teaching students the value of using the Internet as a resource for professional development and teaching.

Electronic Journals to Promote Communication and Reflection

Electronic journals were required in the CLT course to foster communication between my students and me and to promote reflective teaching practices. Guided journal writing has been used effectively in teacher education programs for more than a decade (see, e.g., Porter, Goldstein, Leatherman, & Conrad, 1990; and Richards & Lockhart, 1994). Electronic journals (e-journals), or journals exchanged via e-mail or other computer-mediated communications systems, have several advantages over traditional paper journals for the CLT class:

- We could exchange the journal at any time without waiting for a face-to-face class session.
- I could intersperse my comments easily into the electronic journal when replying to the students.
- Electronic journals supported my students in using or increasing computer literacy.
- My students had a model of electronic idea exchange, which could be continued after the course through participation in professional electronic list discussions or e-mail exchanges with peers and/or mentors.

E-journals were formally submitted three times during this 5-week summer session course, following a model proposed by Grimmett, MacKinnon, Erickson, and Riecken (1990). With this three-step plan, students

1. prepare for the course by relating the course content to their own experiences in the first journal entry;
2. apply what they are learning to different teaching contexts in the second journal entry; and
3. evaluate their own learning in the final journal entry.

I responded to all students' journal entries by providing my own perspectives on issues, by posing questions they might have overlooked, and by providing positive feedback on using and applying computer technology to classroom teaching.

The first e-journal was exchanged early in the course when students were practicing and demonstrating basic computer proficiency. In this e-mail exchange, students prepared for the course by considering which of their computer skills needed practice and improvement, and I was able to give them advice on potential projects based on their skill level and interests. Initial student entries gave me a way to assess my students' needs and provide individualized guidance and encouragement.

The second e-journal was exchanged when most students were finished with software reviews and Internet exploration projects (Units 2, 3, and 4). At this point in the semester, students were asked to discuss in their e-journals how they would apply their newly enhanced computer skills to teaching. Students also were planning final projects, which they described to me in these second e-journal entries. I gave them feedback on the feasibility of their projects, and pointed them to available resources on campus.

The third and final e-journal allowed students to evaluate their projects and their general progress with computers as tools for language teaching. For this final e-journal, I encouraged students also to evaluate the role of computers in education and to reflect on themselves as learners in the course.

For several students, e-journal exchanges helped to reduce computer phobia. The students in the course had a wide range of computer skills and experiences, thus the private forum of the journals was an effective tool for students to express their varying concerns. For example, on one occasion when the network was down, we could not work on the Web or use e-mail. Three students expressed in their e-journals their worry about how they would handle this situation if it were to occur in their teaching. These e-journals then sparked a whole-class discussion on contingency plans for computerized activities. I also was able to model my own use of contingency plans on the few occasions where we experienced software or hardware problems. Several students commented in their final e-journals on what strategies they would employ to create contingency plans in the case of computer failure.

Although computer phobia was an issue for several students at the beginning of the course, only one continued to express fears in his e-journal at the end of the course. This particular student was having difficulty with the steps involved in creating a Web page, a project he found very confusing. He had difficulty conceptualizing how and why HTML functioned, and he felt he did not get enough support from me or other students in the course while developing his Web page. I was able to address some of his frustrations by pointing out his other successes with course tasks. By allowing students to interact with me through their electronic journals on both theoretical and practical topics, I provided a forum for my students to reflect on various aspects of teaching with technology.

PRACTICAL IDEAS

Redesign Syllabus

In the time since I taught the summer CLT course, the development of my own philosophy for pedagogical uses of technology and changes in the technology have prompted me to redesign the CLT course. Also, I now offer the course in the regular 15-week semester at Colorado State University (Fort Collins, Colorado).

One of the biggest adjustments to the course is the expansion from a 5-week summer course to a semester-long class. Although the contact hours with students are roughly equal (44 contact hours during the summer course vs. 45 during an academic semester), more readings and more extensive projects can be expected in a semester-long course because students can devote more out-of-class time to study and preparation. The list of readings, for example, has been updated as well as expanded to include

1. *Overview materials*
   Egbert & Hanson-Smith, 1999
   Roblyer, Edwards, & Harviluk, 1997
   Bush & Terry, 1997
   Kassen & Higgins, 1997
2. *Classroom techniques*
   Egbert & Hanson-Smith, 1999
   Boswood, 1997
   Warschauer, 1995
3. *Language analysis with language corpora and concordancers*
   Biber, Conrad, & Reppen, 1996, 1998
   Ma, 1994
   Tribble & Jones, 1990
   Johns, 1991
   Johns, 1994
   Flowerdew, 1993
4. *Language and culture learning on line*
   Beauvois, 1998
   Lafford & Lafford, 1997
   Martinez-Lage, 1997
   Colomb & Simutis, 1996
   Ma, 1996
   Meagher & Castaños, 1996
   Werry, 1996
   Markley, 1998
5. *Computer adaptive language testing*
   Henning, 1991
   Greenberg, 1998
   (in response to changes in the TOEFL [Test of English as a Foreign Language, 1999])
6. *A more theoretical consideration of on-line communications*
   Beauvois, 1997
   Chun, 1998
   Jaeglin, 1998
   Kelm, 1998

Generally, more time in the course is devoted to

- corpus-based research techniques for task and materials development
- issues of CALL classroom floor-plan design, including a simulation in which students design a lab or classroom given certain educational goals and budgetary constraints
- practice in seeking and writing grants for the purchase and support of computers for teaching

- What resources are available at my university, including hardware and software?
- Is there financial support for additional purchases of hardware and software?
- What kind of computer support is offered on my campus for troubleshooting?
- Are computer technologists available to speak to my students? What will they add to the class?
- Do I know (or can I learn) the necessary software in preparation for the course?
- Can I demonstrate products I've created using different software and hardware, such as support materials using native-speaker software and language lessons developed with authoring programs?
- What kinds of computer media are available for electronic discussions (for example, e-mail newsgroups and Web communications interfaces) so that students can compare different modes? Can I negotiate the interfaces effectively, and demonstrate them to my students?
- Will students have access to hardware and software outside of class?
- What kinds of computerized classrooms and labs are available for teaching classes or visits by the students? Do I know how to operate the equipment in these sites and train students in its use?
- What contingency plans can be built into lessons in case of technology failure?
- Do I know where to find resources to help my students write grants to gain better access to technology for their own learners?
- How flexible am I as a teacher? Can flexibility be built into the course to allow for varying degrees of computer proficiency?

FIGURE 2. Issues in CLT Course Development

- theoretical concepts in adaptive testing, such as item response theory and the development of item banks, as well as exploring new ways to teach test-taking strategies to ESL/EFL students planning to take the computerized TOEFL

Less time is given to Web authoring and hypertext. Given the Web tools widely available, which provide the user with a graphical editor for design and publishing, it is no longer necessary to teach HTML other than to highlight basic principles.

Consider Course Design

As with the development of any new course, a careful consideration of institutional resources, student needs and interests, and personal strengths should be taken into account. The questions in Figure 2 will help a teacher educator consider relevant issues in preparing a CLT course.

The two greatest challenges to using computers for educational purposes remain training for teachers and access for students. It is essential to devote some part of a teacher education program to hands-on training in a CALL environment. Providing such support can reduce anxiety in many student teachers, and it will ensure that trainees without computer access at home are not prevented from participating in new advances in their field. Hands-on training models the types of support they will need to provide their own students. When teachers can use, and keep up with, new computer technologies, their job skills are enhanced. However, it is important to design teacher education courses that will serve students at different levels of computer literacy. My teacher preparation courses challenge participants to accommodate to and exploit computers in language education. One goal for the CLT course is for my students to become autonomous learners, able to apply what they have learned beyond my class and the university experience.

CONCLUSION

Schools around the world are turning to computers as a means to implement education. By teaching my students both about and through computers, I feel I am equipping them with valuable tools for teaching and professional development. Because many of our students will find employment in isolated teaching posts (e.g., overseas or on Native American reservations), helping them develop their ability to communicate with other professionals opens new possibilities for establishing electronic peer and mentoring relationships. Through such electronic interactions, they can continue their development as educators.

CONTRIBUTOR

Sarah Rilling is assistant professor of English at Colorado State University, where she teaches TESL and ESL. She has taught undergraduate and graduate courses in TESL and ESL/EFL in higher education for more than a decade in the United States and Japan. Her interests include classroom-based research and computer-assisted language learning.

Glossary of Key Terms

adaptive testing: computer software programs in which the computer adjusts test item difficulty depending on the user's prior answers

application: a software tool program that allows the user to create documents, manipulate text or graphics, organize data, or perform other metafunctions

ASCII text: American Standard Code for Information Interchange, computer code designating the numbers and letters on the keyboard; used to exchange data between operating systems, for example, on the Internet

authoring applications: computer programs that allow the user to create documents and files that can be read or used without the user changing the overlying formats, (e.g., database software, word processors, presentation programs)

browser: software that allows computers to interpret signals from the Internet as text, graphics, video, and other media

CALL: computer-assisted language learning, a term designating both software and Internet-enhanced approaches

CGI: common gateway interface, a computer programming language allowing Web browsers, for example, to display independent windows or respond to user input

concordancer: software that finds specific instances of words (or letters or phrases) in the text, and aligns them in columns with surrounding text; often used for grammatical or vocabulary searches

content CD-ROMs: compact discs containing subject matter information with little or no instructional apparatus (e.g., multimedia encyclopedias)

closed captioning: text subtitling of video and television programming

DVD: digital video disc (or digital versatile disc), high-capacity storage device gradually replacing CD-Roms

e-journal: electronic journal, an on-line document, usually archived, with articles posted regularly and editorial staff (also referred to as an *e-zine, electronic magazine*); also, a student on-line journal that may be commented on by others electronically

electronic list: messages sent automatically to all list members when one member posts an e-mail message to the list's server address

e-mail: correspondence via electronic mail

ENFI: Electronic Networks for Interaction, a project for real-time written interaction for deaf students on a local area network, founded at Gallaudet University, Washington, DC

FTP: file transfer protocol, a coding system that allows files to be transferred across the Internet at high speed

freeware: computer software given away by the author, often over the Internet, sometimes for the cost of shipping and handling, sometimes in exchange for other software (see *shareware*)

Gopher: An Internet search engine developed at the University of Michigan (the gopher is the school mascot and also puns on the term *go for* something)

hotlink: a word, phrase, button, or image on a Web page that may be clicked to take the user to another site or page on the Web (see *hypertext* and *hyperlink*)

HTML: hypertext markup language, a computer programming language that allows the Internet to be used for multimedia and hyperlinking

hyperlink: computer code allowing the user to jump to another Web location (see *hypertext, hypermedia,* and *hotlink*)

hypermedia: text, graphics, animations, and video embedded in electronic documents

hypertext: text with links to other text or Web Pages, or to visual and audio media, either in software or on the Internet; these branches may further enhance meaning or enrich understanding

Internet: a system of hardware and software that links computers via satellite, phone, modem, and cable around the world

IRC: Internet Relay Chat, protocols that allow multiple users to communicate in real time on the Internet

Java: a Web programming language allowing any computer browser to interpret, for example, animations or pull-down menus

JavaScript: a variant of HTML produced by Netscape Communications that allows for user interaction, animations, and other Web functionality

key pal: keyboard + pal, an electronic mail correspondent or pen pal

LAN: local area network, connections within a site, campus, or company that link computers without using the Internet

listserve: a colloquial term for an electronic mailing list created by software such as Listserv and Listproc

lurking: participating passively in an electronic list by reading messages but not responding to them

MOO: software that allows users to establish a text-based environment in which they can interact imaginatively in real time (from multiuser domain, object-oriented; see *MUD*)

MUD: multiuser domain or dungeon, software that enables users to interact imaginatively in a text-based environment in real time; newer versions of MUDs and MOOs may include visual enhancements or virtual reality (see *MOO*)

networked writing: writing supported by computer applications (e.g., CommonSpace, Daedalus Interchange) that allow several users at once to send and receive written messages with a variety of pedagogical aids, usually on a LAN, but increasingly also on the Internet

plug-ins: miniapplications that enhance the multimedia quality of Web browsers or allow software designed for the desktop to be used on the Web; software codes that provide additional functionality to applications or Web pages

presentation software: application (including special fonts, animations, video, and sound) that allows the user to create multimedia shows

rushes: first prints of video or film prior to editing

scaffolding: a system in which more competent language users respond authentically to learners, providing models, grammar, and vocabulary that help them communicate and move to more advanced levels of language competency

self-access labs: computer or resource centers designed to be used by individuals on a drop-in basis, often with paper support designating materials appropriate to specific lessons, courses, or levels of proficiency

shareware: computer software given away by the author, sometimes for the cost of shipping and handling, sometimes in exchange for other software (see *freeware*)

speech recognition software: an application that permits computers to interpret and execute orally delivered commands

URL: Uniform Resource Locator, a Web address; formerly known as Universal Resource Locator

WAN: wide area network, a network that extends beyond a local area, for example, to several buildings in a school

Web: (see *World Wide Web*)

WinTel: computers based on the Intel processor chip and the Microsoft Windows operating system desktop environment

World Wide Web: software providing the Internet with multimedia capabilities (derived from wide bandwidth and the Internet's weblike interconnections)

WYSIWIG: what you see is what you get, an acronym usually referring to interfaces in authoring applications, word processors, and graphics programs

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Technology-Enhanced Learning Environments

Edited by Elizabeth Hanson-Smith

This volume of the Case Studies in TESOL Practice series presents case studies from Europe, North America, and the Middle East in which teachers have adapted and pioneered teaching innovations that range from simple additions to traditional classroom teaching to radical alternatives that change the nature of language learning and teaching.

Several themes inform these chapters. Authors explore the dominant role of Internet use in education, describing programs that use the Web as an environment for education, an optimal setting for learning to take place. The enduring role of teachers in the design and use of technology in language is another central thread. So, too, is the role of technology in transforming institutions at the grassroots level. Most of these chapters report that changes wrought by technology far exceeded the designers' original intentions, often leading to new ways of teaching and learning, enhanced cooperation among teachers, the creation of more satisfying working conditions for instructors, and more self-sufficiency for students.

Part 1: Building a Computer Learning Center
Part 2: Organizing the Curriculum
Part 3: Engaging Students
Part 4: Training Teachers

In these technology-enhanced learning environments, learning centers, classrooms, and labs become spaces in which students and their teachers explore, create, and communicate as they learn language.

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